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Vol. XVII., No. 1 MAY, 1916 $2.00 per Year

October, 1916

INDUSTRIAL CANADA



THE
IMPERIAL LIFE ASSURANCE CO.'S
ADVERTISING CAMPAIGN

which has been so very successful and which has stimulated many other Life Insurance Companies to undertake general newspaper advertising—is placed by us.

Three years ago we had the honor of being entrusted with this account by Mr. C. Elvins, Advertising Manager of the company—and we believe that, upon enquiry, Mr. Elvins will give a good account of our service.

J. J. GIBBONS, LIMITED
General Advertising Agents

MONTREAL
Cables—Gibjay, Toronto

Head Office:
TORONTO

WINNIPEG
Codes—Liebers, ABC, 5th Edition

245305
16:4:30

PUBLISHED BY THE CANADIAN MANUFACTURERS ASSOCIATION INCORPORATED.
HEAD OFFICE TORONTO · BRANCH OFFICES, MONTREAL, HAMILTON, WINNIPEG, VANCOUVER, HALIFAX, QUEBEC.

MALLEABLE IRON CASTINGS

The Pratt & Letchworth Company Limited

BRANTFORD ONTARIO

AUTOMOBILE PARTS
DROP FORGINGS



SHEET METAL WORK
GENERAL STAMPINGS

We have erected and are now operating

THE LARGEST COMMERCIAL DROP FORGE PLANT IN CANADA

We are equipped to handle large forging contracts.
This expansion also increases our stamping facilities.
We stand by our Motto: Quality and Service.

DOMINION FORGE & STAMPING CO., LIMITED
Walkerville - Ontario

REMOVAL NOTICE

WE have moved our head office to central and much more commodious premises in the new

ROYAL BANK BUILDING

Corner King and Yonge Streets, Toronto

We extend a hearty invitation to all customers and friends to call in and see us

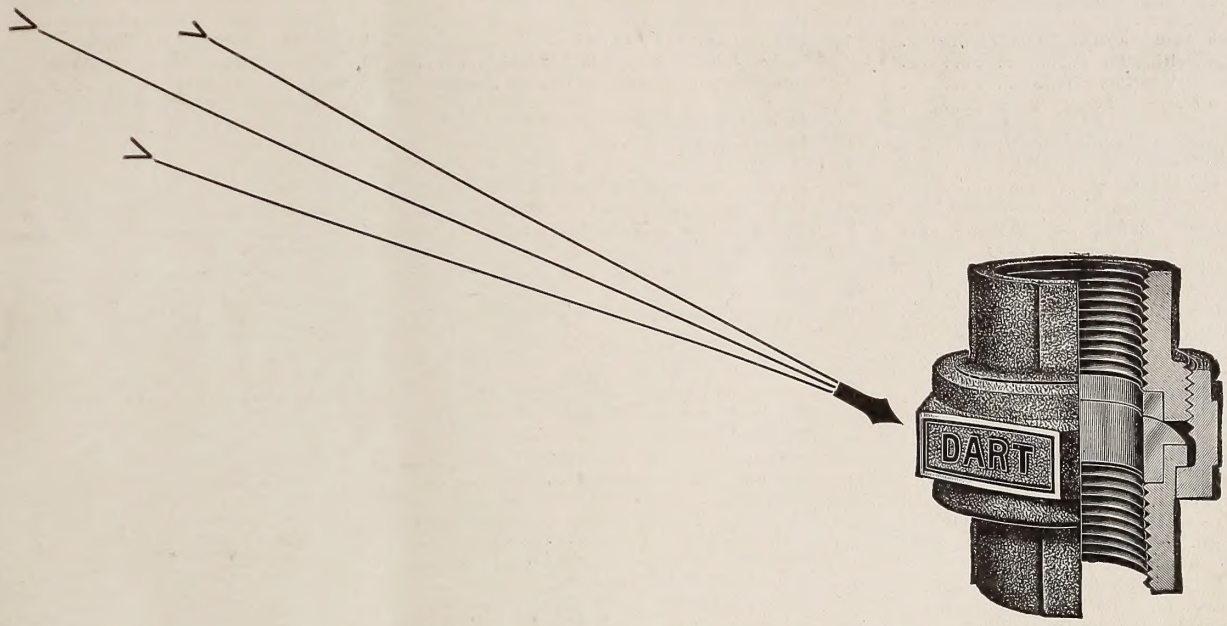
THE BRITISH AMERICAN OIL CO.

LIMITED

REFINERS, FOOT OF CHERRY ST., TORONTO

BRANCHES:

MONTREAL OTTAWA LONDON WINDSOR ETC.



The Union Pipe Coupling With That Name on it is a Profitable Union for You to Use

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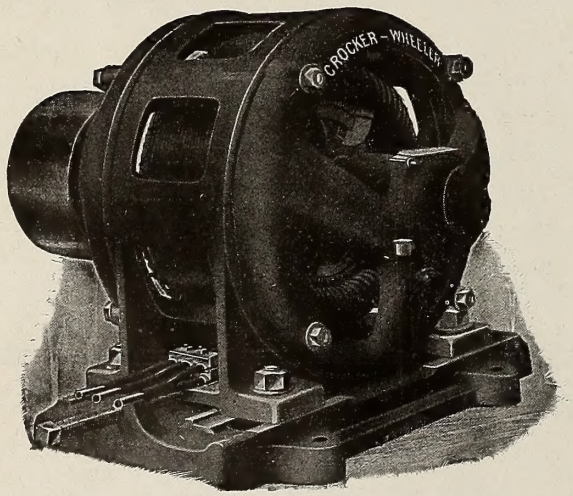
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THE DESIGN OF

CROCKER-WHEELER INDUCTION MOTORS

INCLUDES:

Heavy Shafts

Large Journals

High Power Factor

Excellent Efficiency

They have many other desirable features; Bulletin 155 describes them.

THE CANADIAN CROCKER-WHEELER CO., Limited

MANUFACTURERS AND ELECTRICAL ENGINEERS

Head Office and Works: St. Catharines **District Offices: Montreal, Toronto, Vancouver**



A PRESTO-PHONE DESK SET

If You Save the Time of a High-Priced Man

by installing a factory telephone system that will keep the Manager and Superintendent in close touch with every piece of work in the shop, you reduce your overhead. You also speed up your plant, you keep every department operating continuously, and you increase your output.

PRESTO-PHONE

an automatic factory system that does not need a central operator

gives a complete telephone service at the minimum cost of installation and no cost of operation.

You can have up to 100 different telephones in use at one time. You can get into immediate touch with any employee in any part of the plant.

WRITE FOR DESCRIPTIVE LITERATURE

Canadian Independent Telephone Co., Limited

273 Adelaide St. West : : TORONTO



Methodist Book and Publishing House, Toronto.
Heated by Dunham Vacuum System

For Industrial Plants and Office Buildings

The DUNHAM VACUUM HEATING SYSTEM

Highest radiator efficiency and low operation cost secured through the use of DUNHAM Thermostatic Radiator Traps on the return end of each radiator.

You can Dunhamize your present vacuum heating system by replacing those old worn-out, obsolete float traps with Dunham Radiator Traps.

Or with the addition of Dunham Traps to your one-pipe system you can transform it into an efficient, up-to-date heating system.

Write to-day for further particulars and Bulletins on Dunham Specialties which are "Made In Canada."

C. A. DUNHAM CO., Ltd. - - TORONTO, CAN.

OTTAWA—214 Booth Bldg.
MONTREAL—Room 20, 11 St. Sacrament St.
HALIFAX—Eagar, Coombs & Co., Ltd., McCurdy Bldg.
VANCOUVER—520 Duncan Bldg.
WINNIPEG—405 Tribune Bldg.

ADJUSTABLE TAPS

FOR Shrapnel and H.E. Shells



ON hard, tough shell steel, solid taps are too expensive as the excessive wear quickly puts them below gauge size.

The simple adjustment on the tap, shown in our cut, was gotten out to overcome the effect of this excessive wear and to provide an economical substitute for the expensive chaser tap.

The accuracy to size and form is easily maintained and the life of the tool prolonged far beyond that of a solid tap at a comparatively small advance in price.

We can supply them for all tapping operations on Shrapnel and H.E. shells to 4.5" diameter.

Ask for our list and prices of Shell Tools
Reamers, Taps, Dies, Cutters

If you have not received our No. 8 catalogue yet, we have one for you.

PRATT & WHITNEY CO.
of Canada, Limited
Dundas : Ontario

MONTREAL
723 Drummond Bldg.

WINNIPEG
1205 McArthur Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

THE JOHN BERTRAM & SONS CO. LIMITED

DUNDAS, ONTARIO, CANADA

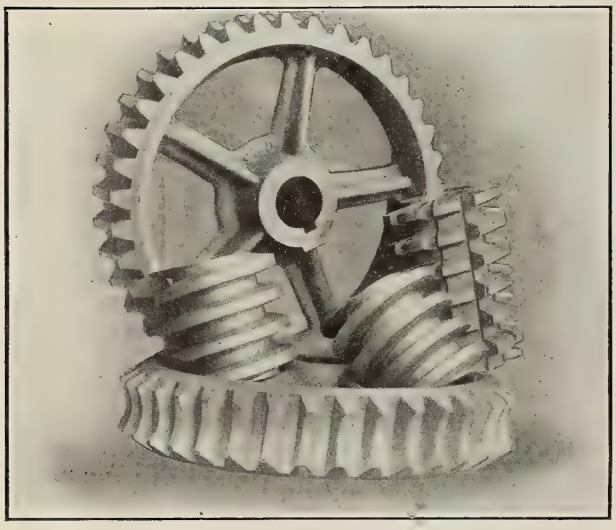
MONTREAL
723 Drummond Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

WINNIPEG
1205 McArthur Bldg.

CUT GEARS

CUT GEARS



Worms and Worm Gears with Hob.

The only Gear Shop in Canada for Specialized Work in a large range of sizes.

Write for Quotations.

Hamilton Gear & Machine Co.

COR. CONCORD & VAN HORNE **TORONTO**



Let us systematize your handling problem.

Canadian Mathews Gravity Carrier Co., Ltd.
484 Richmond St. W., Toronto Patented

DU PONT FABRIKOID
REG. U. S. PAT. OFF.

The Accepted Leather Substitute

FABRIKOID has been adopted as the standard upholstery material for furniture, automobiles, carriages, motor-boats, railroad and street railway coaches, theatre seats, and for novelties, book-binding, etc. Comes in all grains, colors and grades, suitable for any purpose where leather effect and qualities are desired.

DU PONT FABRIKOID

Is Warranted Superior to Coated Splits

and "so called genuine leather." It is impervious to moisture and dust, and not affected by climatic conditions.

State Intended Use, and We Will Send Suitable Samples.

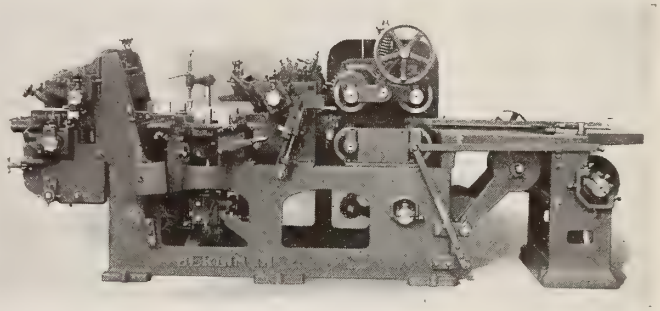
Du Pont Fabrikoid Company
Toronto, Ont.

These Yates - formerly BERLIN Moulders

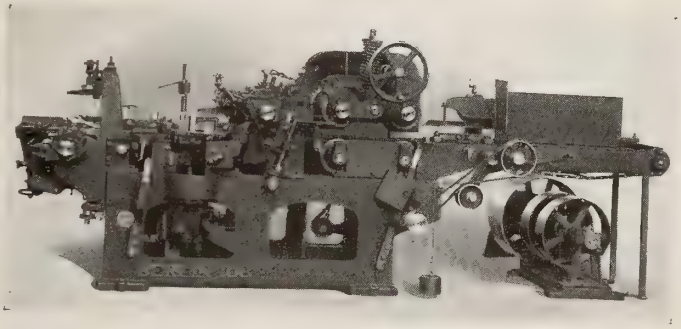
A Line of Thoroughbreds

Consistent performance under all conditions is what marks the "thoroughbred"—and Yates Moulders ***can*** do that thing. Their high speed production day in and day out at no increase in upkeep cost, multiplies profits. Uniform production of finest quality moulding attracts those customers who demand the best—not the price. That's the kind of business you're "fishing for," and it's the kind you can "land," too, if you're equipped with Yates Moulders.

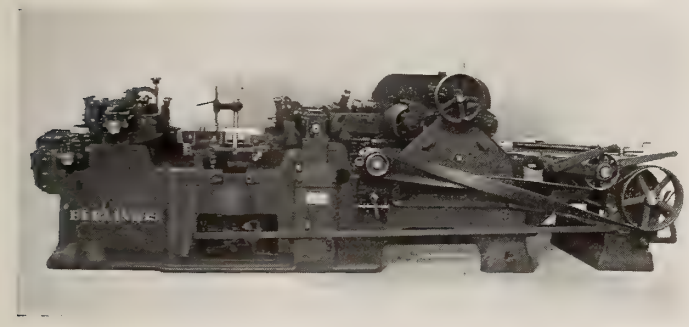
Yates No. 108.—Specially designed to do varied work. Set-ups made quickly—eliminates 30% to 50% of that non-productive time. Hopper feeds highest quality patterns in hardwood 80 feet or more per minute. Does matching and surfacing as well. Hundreds of enthusiastic owners all over Canada and America.



Yates No. 111—Just the machine to turn unsized lumber into finished moulds at one operation. An extra sizing head makes it possible. Has in addition all the features of "108." Saves one operation—reduces manufacturing costs.



Send for Furniture Fundamentals It's free



Yates No. 109.—The Monarch of Moulders. Turns out a perfect product at 150 feet a minute. Will do all the moulding, matching and surfacing in the average mill—three machines in one. Silent running, quick changes, built big and strong to stand the pace. Nothing like it in the moulding world.

You are interested in one or more of these moulders. It will put you to no expense or obligation to get pictures and full details. Ask us to-day.

P. B. Yates Machine Co. Ltd.

HAMILTON, ONT. CANADA

U.S. Office: Beloit, Wis.

DUNLOP



This trade-mark is an unfailing emblem of reliability.

It signifies unusual service at minimum cost.

Dunlop Rubber Belting

We take pride in the fact that Dunlop Rubber Belting is unbeatable for any service, under any conditions. Twenty-two years' experience gives us quality precedence over any other rubber manufacturer in Canada, in the making of belting, as well as other rubber products.

Because all the knowledge that we have gathered together during those many years has been combined to produce

"GIBRALTAR REDSPECIAL"—a Friction face belt for heavy and abnormal main drives,
and
"SAMSON"—for conveyance purposes requiring utmost staunchness in a belt.

No matter how unusual the service might be, for which you desire a belt, if it's on main drives, you need Gibraltar; and if it's on conveyors, nothing else than Samson will do.

Either of these belts—or for that matter any Dunlop Rubber faced or stitched belt—will cost you less, and give you more, in the final accounting.

Dunlop Packings

We believe Dunlop "Sunset" Packing to be right. That's why we make it.

Buyers know it is unexcelled. That's why they continually use it.

Dunlop "Sunset" Packing has that desirable flexibility that ensures the necessary "life" in a packing. Its remarkable tenacity holds on the hottest joint. Also, Spiral Packing, Valves and Diaphragms of enduring quality.

DUNLOP TIRE & RUBBER GOODS CO., Limited

Head Office and Factories: TORONTO, Can.

Branches: Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, St. John, Halifax.

RUBBER-MADE GOODS

Look for this Trade-Mark on the Rubber-Made Goods You Buy



We specialize in the manufacture of Hose for the following purposes:—

Fire—"Dunlop Rubber Jacket," "Imperial Woven Jacket"
Steam—"Gibraltar," "Longlife"
Pneumatic Tool—"Longlife," "Hercules"
Water—"Hercules," "Peerless"

Besides making every other type of hose it is possible to use. Up-to-date ideas, modern equipment, and expert artizans, ensure users of the Dunlop Product all that is best in hose.

Just here we wish you to remember that we are the only rubber company in Canada authorized by the Underwriters' Laboratories, Inc., Chicago, to manufacture Fire Hose bearing their rubber label of approval.

THE DUNLOP LINE

Consists of High-Grade Tires for Automobile, Motor Truck, Bicycle, Motorcycle and Carriage, and High-Grade Rubber Belting, Packing, Fire Hose and General Hose, Dredge Sleeves, Mats, Tiling, Heels, Cements and General Rubber Specialties.

DUNLOP TIRE & RUBBER GOODS CO., Limited, Head Office and Factories TORONTO

Branches: Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, St. John, Halifax.



$850
Roadster, $825
Model 75 *f.o.b. Toronto Ont.*

Time flies —waiting is wasting

You who have waited — why?

Are you one of those who wouldn't get a car until you could get a *real* one—without paying too dear a price?

Your wait is over—here is a real automobile—every inch an Overland—for $850.

Have you been waiting for a small car which you could own without apology for its appearance?

Wait no more — the $850 Overland is a beauty.

Do you wait for a small car which is roomy, comfortable and easy riding?

No need to wait longer—the $850 Overland proves that comfort does not depend upon size.

Almost everyone with automobile experience has realized the many advantages of the small car.

Men who own both large and small cars use the small one constantly — drive the large one only on occasion.

But until now small cars have been only a convenience —a utility—lacking in appearance, comforts and equipment.

The $850 Overland has changed all that—

It has the small car advantages—the big advantages of economy — the delightful advantages of ease of control and small turning radius.

But it also has the advantages heretofore found only in the larger, more expensive cars—beauty—finish—style—comfort — every convenience of complete equipment.

Nothing is lacking — not even the thrill of speed and abundant power.

The Willys-Overland, Limited

Head Office and Works, West Toronto, Canada



$850

Roadster, $825
Model 75 f.o.b. Toronto Ont.

Cheer Up —get this Overland

People who have never driven a car—

People who have driven small cars—with apology and discomfort—

People who have driven the larger, more expensive cars—and counted the cost—

People with no experience—people with much experience—people of small means—people of wealth—all find this $850 Overland their ideal automobile.

That's why it has swept the continent like a prairie fire—taxing to the utmost our enormous capacity, which is easily double that of any other producer of cars of like size and class.

No need longer to ask "Can I afford a car?"

The price of this Overland is $850, and it is absolutely complete to the last detail—there is not a single extra to buy.

And it is the last word in upkeep and operating economy.

No need longer to ask "Will I be satisfied with a small, economical car?"

You will drive the $850 Overland with pride in any company—on any occasion.

You will be proud of its appearance.

The comfortable roominess and its easy riding qualities will be another source of pride.

Its power and speed, and all-round performance, will give you thrills which more than anything else arouse the owner's pride in his car.

So here's what you've waited for, there's nothing left to ask.

There's just one thing left to do.

See the Overland dealer — have him show you the car and demonstrate it.

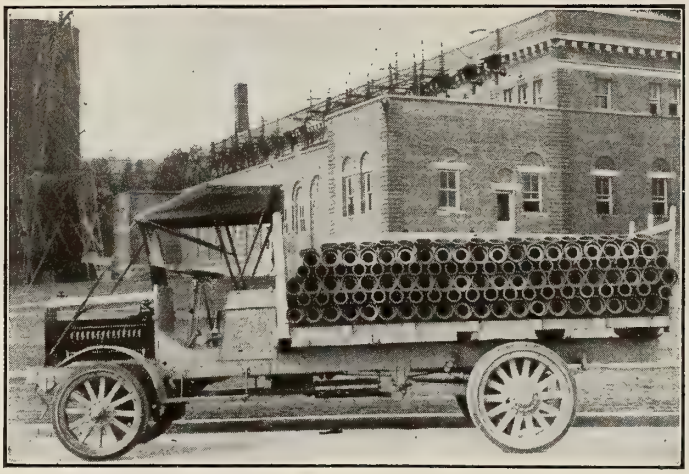
Then place your order without delay, for the buying is already heavy and there is a limit even to Overland production capacity.

Catalogue on request. Please address Dept. 687

The Willys-Overland, Limited

Head Office and Works, West Toronto, Canada

FOR CONTRACTORS



NATIONAL Worm Drive Motor Trucks

1500 lbs., 2000 lbs., 3000 lbs., 4000 lbs., 7000 lbs. Capacities

"Built to do a Truck's Work"

Ask our Traffic Engineers to solve your Haulage Problems

NATIONAL Dump Cars



Our engineering department will be pleased to submit special designs of cars to meet any requirement. Our standard sizes, however, are 4, 5, 6, 8, 10, 12, 16 and 20 yards. We build these cars to any gauge desired. The 10-yard and larger cars are power dumped. The height of the drawbar can be arranged to suit any requirements. Efficient braking equipment is applied as required.

NATIONAL STEEL CAR CO., Limited

Operating Offices and Works: HAMILTON, ONT.

Address inquiries to Hamilton

MONTREAL OFFICE: Shaughnessy Building **NEW YORK** **LONDON, ENG.**

The Canadian Ford Company has Spent Over a Million Dollars on New Equipment Since the Beginning of War

To increase the efficiency and the capacity of the Ford Canadian plant and its service stations—to produce even a better car at a lower cost of manufacture, thus to sell at a lower price, the Ford Canadian executives have put over a million dollars into new equipment since August, 1914.

That this expenditure has been made since war began indicates most emphatically the unquestionable belief of the Canadian Ford Company in the present and future prosperity of Canada and the triumph of the Empire. In fact the Ford Canadian executives are so firmly convinced of this that they are governing the entire policy of a great ten milllon dollar Canadian Company in accordance with this belief.

Since the beginning of war they have spent approximately a million and three-quarters in new buildings, twice reduced the price of the car by $60 ($120 in all) and reduced the price of spare parts $147 per car—all in addition to this million dollars worth of new equipment.

But, in turn, it has been this new equipment that has been responsible in great part for these reductions in prices. Marvelous new labor saving machinery installed in the recently enlarged two-acre machine shop has effected big savings in cost of manufacture.

For instance three drill presses that formerly were used to turn out 600 parts a day, now have been supplanted by three punch presses that turn out 3000 parts a day, and there is absolutely no sacrifice in quality of work.

At a cost of $40,000 three truly wonderful milling machines were installed that mill 48 Ford engine cylinders at once with perfect accuracy.

Perhaps the most wonderful of all are the new gear cutting machines that are a source of amazement to those acquainted with gear cutting methods in vogue serveral years ago. Then there were only two or three shops on the continent where gear cutting could be done at all and it was a slow and most exacting process. But in the Ford Canadian plant there are no less than 46 wonderful automatic gear cutting machines that turn out gears cut absolutely perfect in one-twentieth the time without the touch of human hands except for putting in the blank and taking out the finished gear. When the machine has finished the work it notifies the operator by ringing a bell. One man can operate two or three of these machines, a fact which gives some indication of the great saving in labor that this new equipment has made possible and which also plays a very important part in reducing the manufacturing cost and the selling price of Ford cars.

Again, think of the great saving in labor, as well as time, effected by the remarkable Ford drilling machine that bores 45 holes in a cylinder casting in four directions at a single turn.

Do not assume from this, however, that the number of employees has been decreased. On the contrary, the Ford staff has been increased by 900 men since war began. Furthermore when the present Ford schedule of wages went into effect in April 1915, the wages of these employees were increased $50,000 a month.

If it were not for the exceedingly substantial economies made possible by this new equipment, it can be readily understood that the price of the Ford car, built as it is today of the finest materials procurable, would be very much higher.

No firm that did not have the immense quantity production of the Canadian Ford plant could possibly afford to install such equipment as this and consequently could not sell a car as good as the Ford at anywhere near the Ford prices.

In addition to the equipment told of above new engines were installed in the power plant at Ford, Ontario—650 horse power gas engines specially designed by Ford Engineers.

Also the four new Ford Branch buildings at Montreal, Toronto, London and Winnipeg, each of them as large as many automobile factories, had to be furnished with machinery and appliances. Each one of these branches is so thoroughly equipped as to be able to build a Ford car complete. Each one forms a still further perfection in the already unrivalled Ford Service to Ford owners.

And the fact cannot be overlooked that a policy that dictated the expenditure of such a great sum of cold cash as this during the progress of the war must have been prompted by a very practical and sincere belief in Canada's prosperity—in her future and in her people.

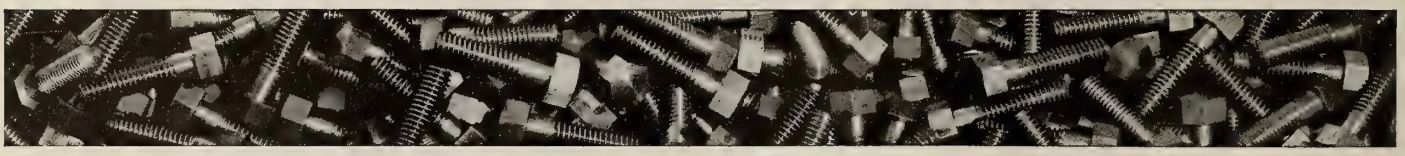
Ford Motor Company of Canada, Limited,
Ford, Ontario

Ford Runabout - - $480
Ford Touring - - - 530
Ford Coupelet - - - 730
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Standard Screws, Nuts, Studs, and Hexagon Brass Nuts Furnished in packages or bulk.

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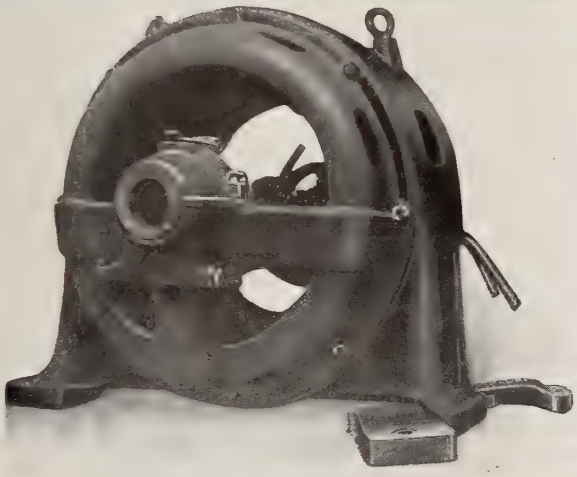
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WHEN TIME IS WORTH MORE THAN MONEY,

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HIGH TENSILE STRENGTH

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Costs more at the beginning, but is by far the cheapest and most profitable in the end.

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will be held in Hamilton on June 13-15. The discussions on the many problems before manufacturers will be of vital interest to every member. The Convention will be, without any exception, the most important meeting of business men of the year.

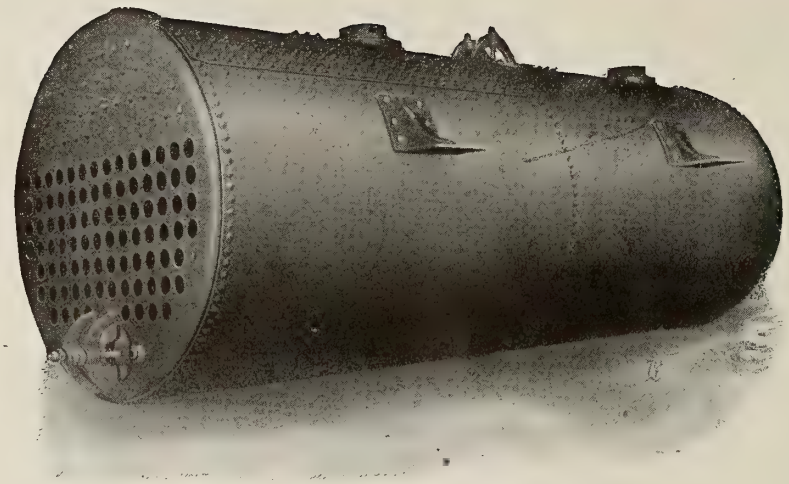
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will be issued immediately after the Convention. It will contain a full Report of the Meetings, and it will be distributed wherever there is an interest in Canadian manufactured products.

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Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

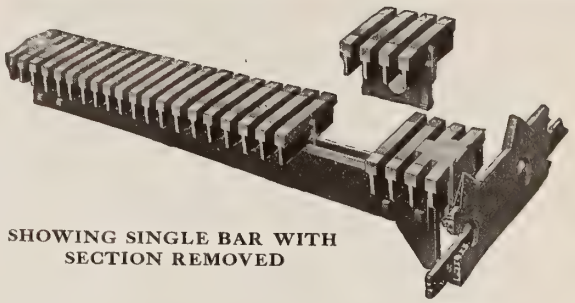
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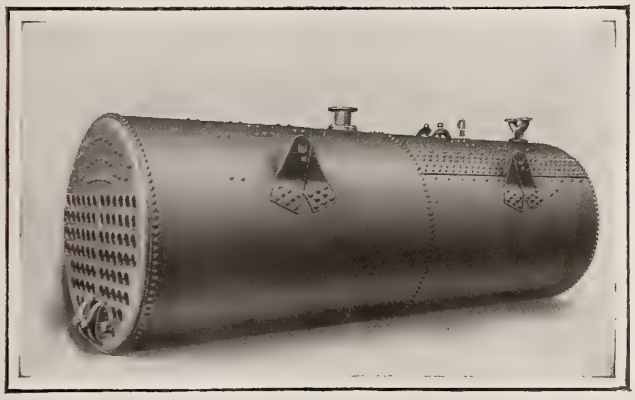
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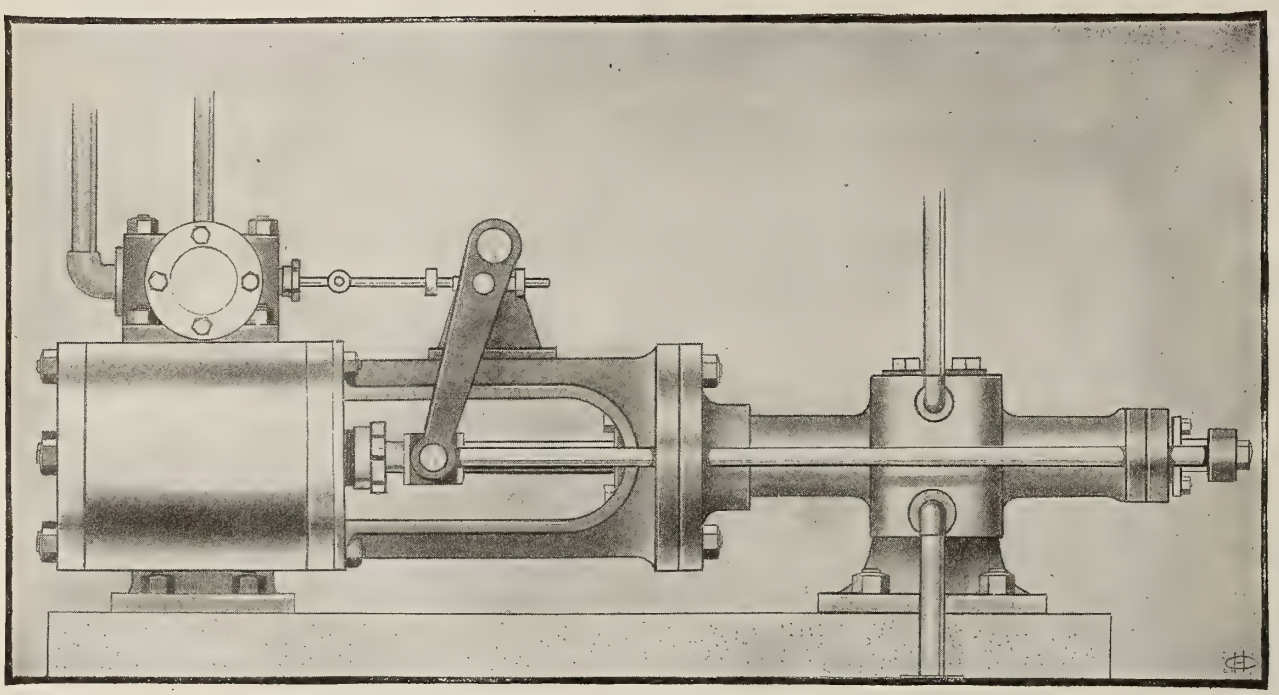
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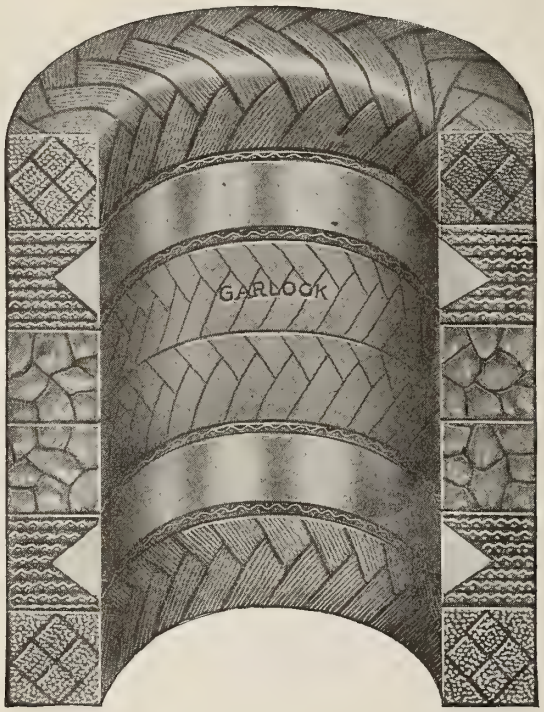
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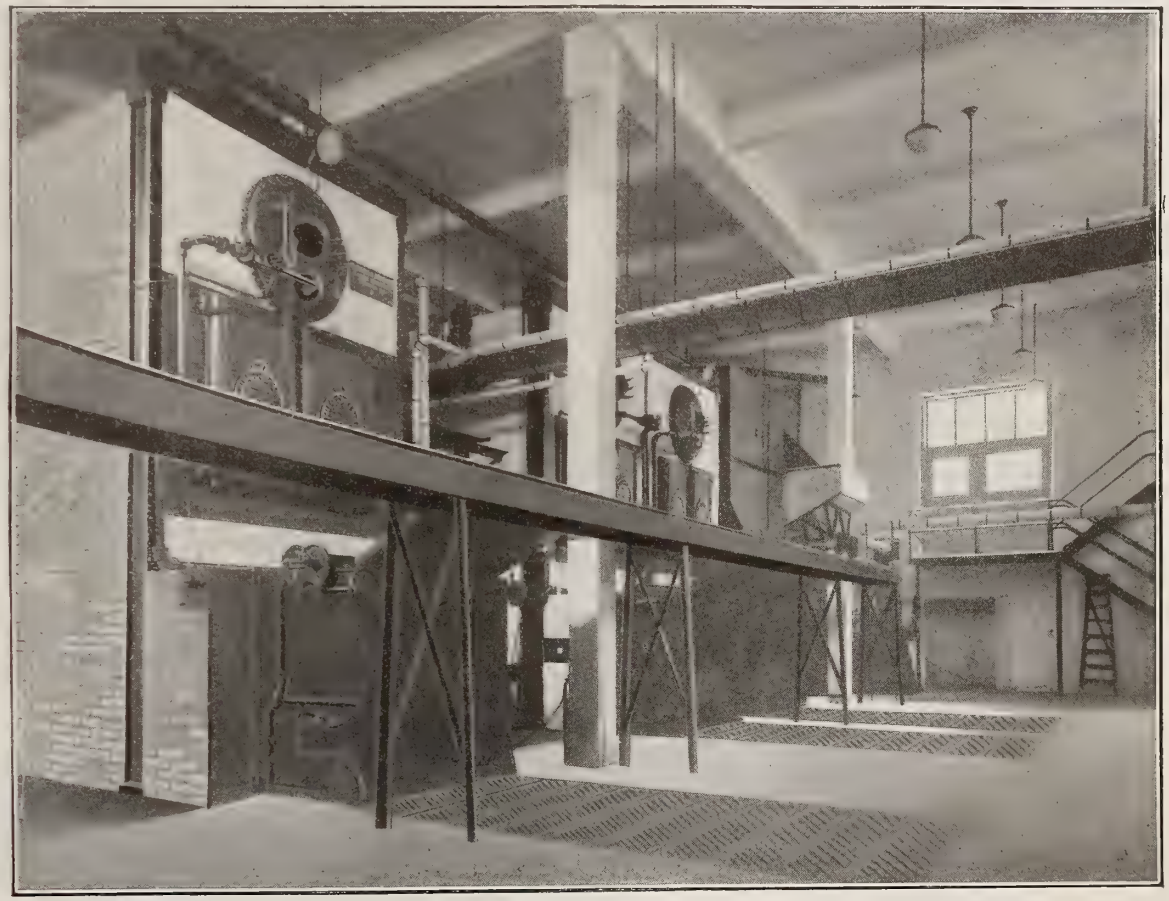
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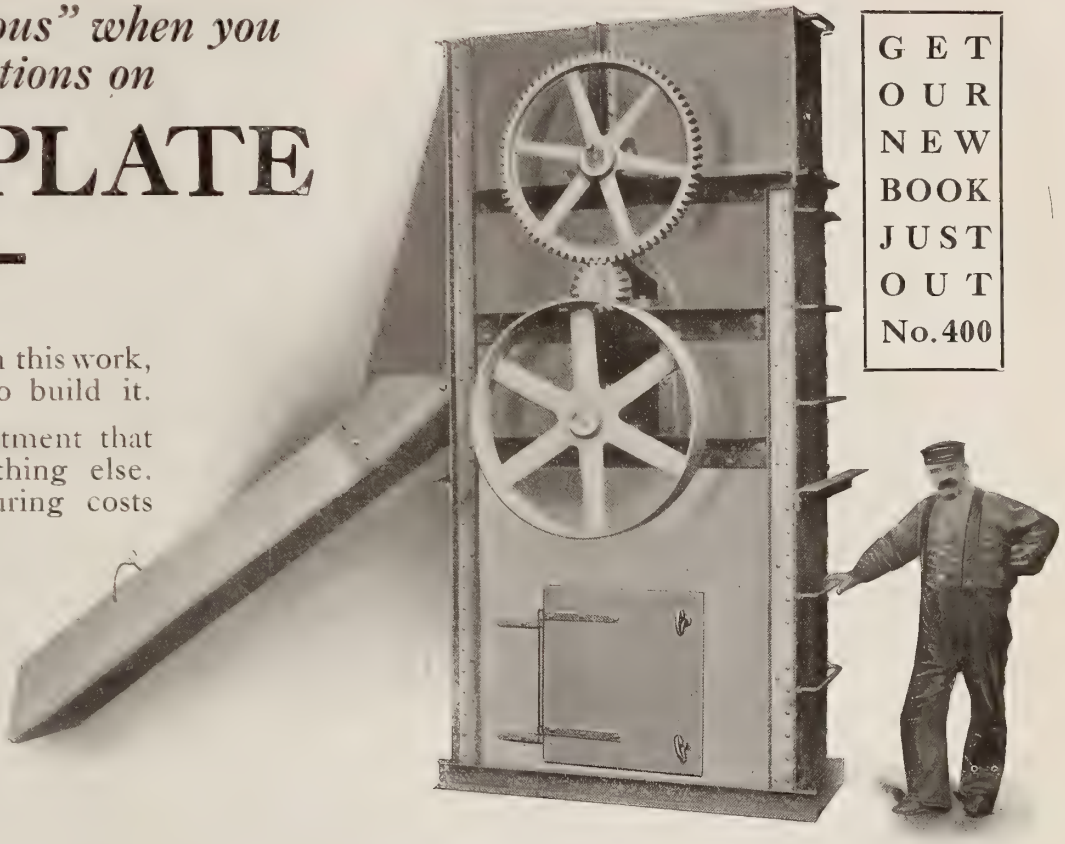
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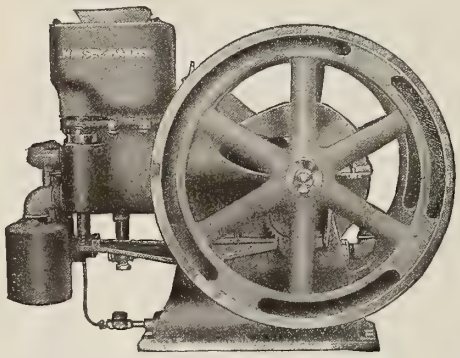
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GASOLINE ENGINES MASSEY-HARRIS PUMP OUTFITS

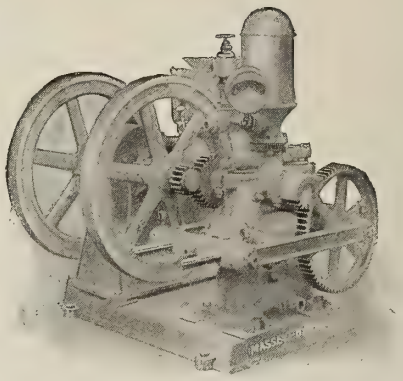
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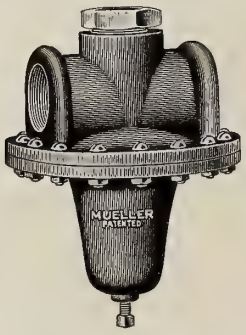
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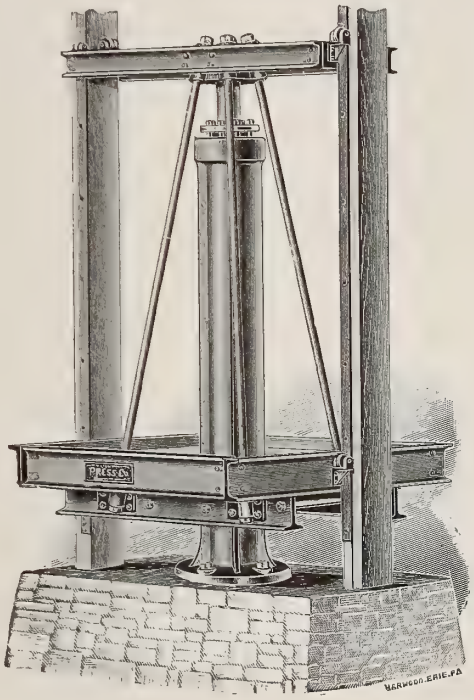
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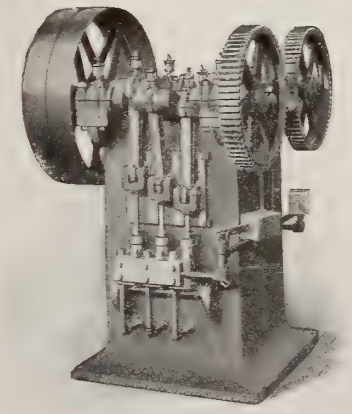
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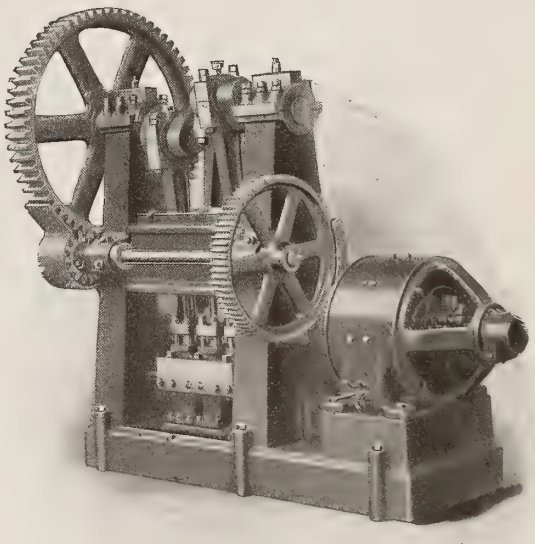


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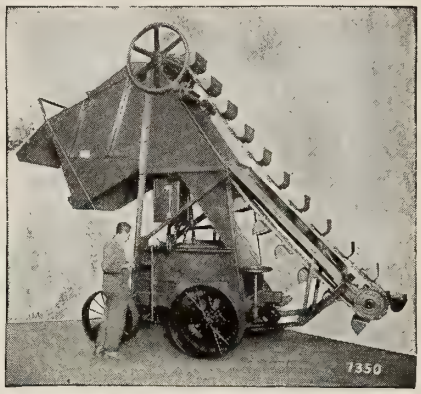
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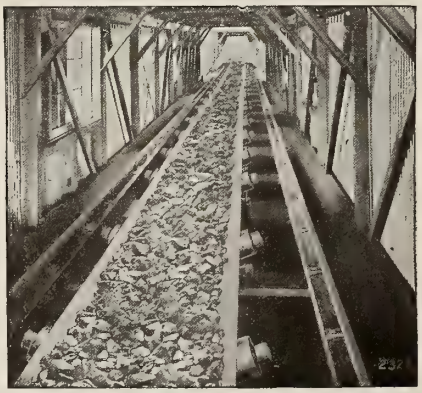
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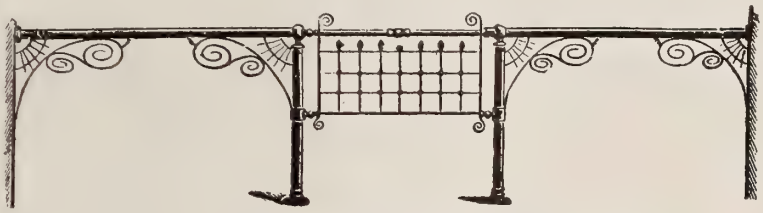
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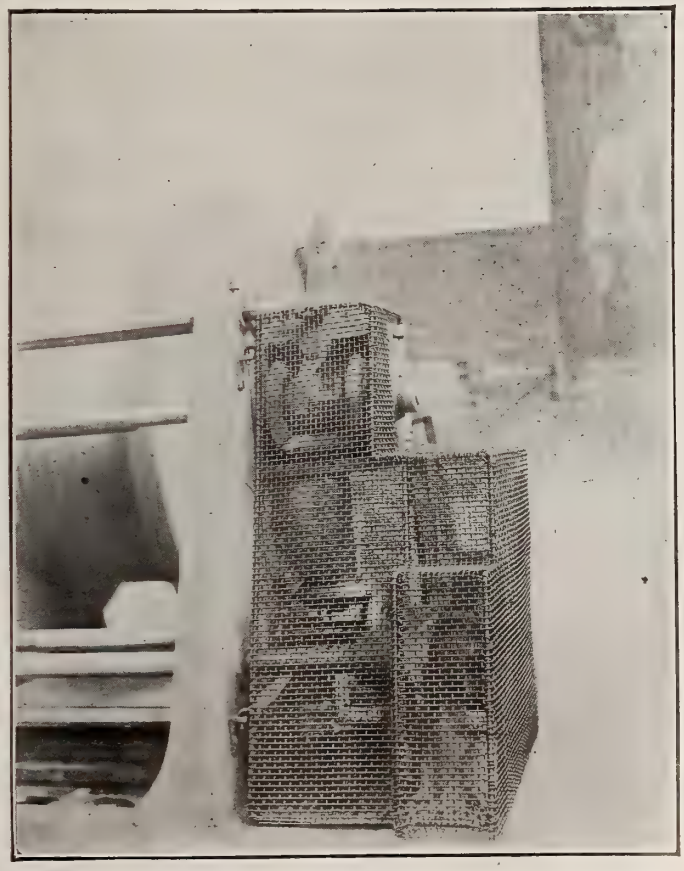


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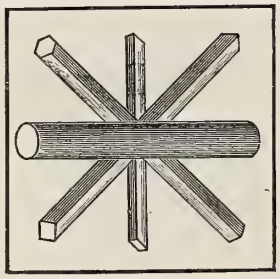
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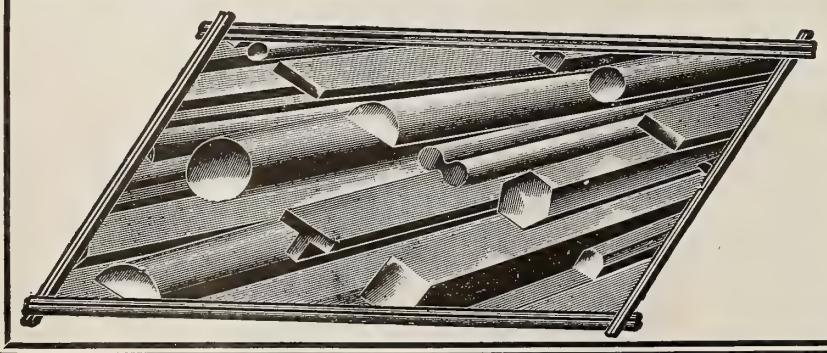
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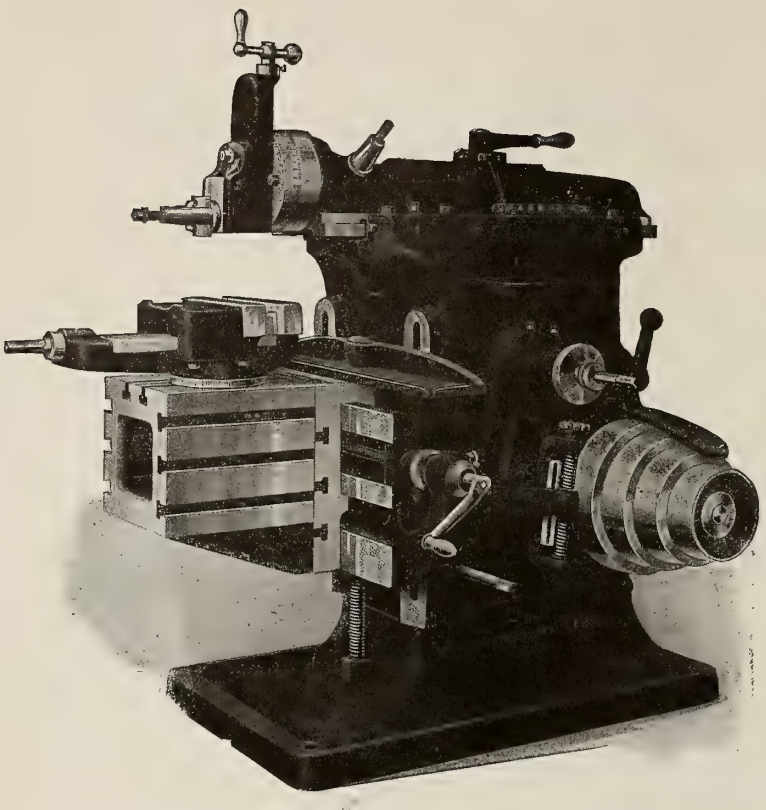
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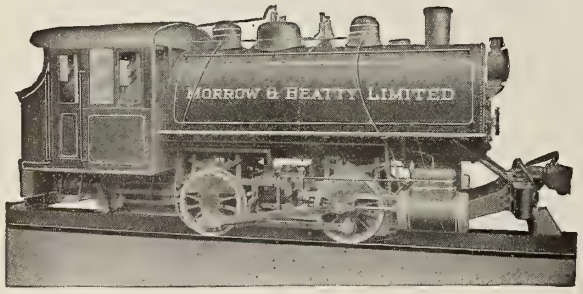
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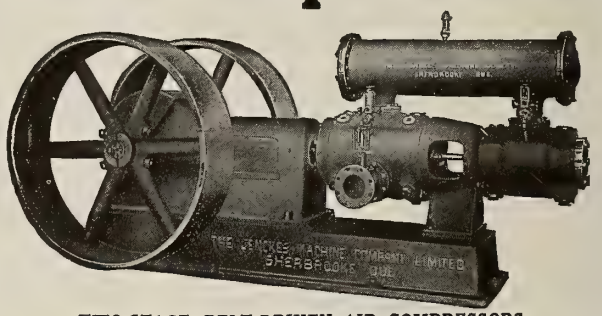
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We have experimented on the
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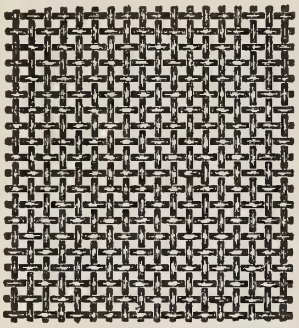
We expect to start operating part of our own plant at once, so are in a position to take care of any business intrusted to us.

Plans are now under way to replace our former plant with entirely up-to-date equipment and much larger capacity.

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We manufacture Babbitt Metal for every purpose.

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Grasselli Lime Sulphur Solution and Lead Arsenate
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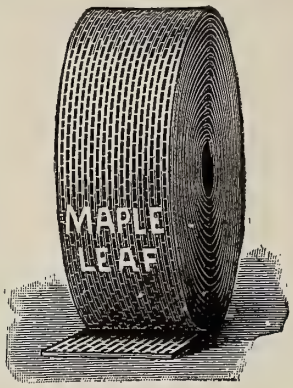
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that jarring, grinding noise in your machine shop caused by the metal gears?

Wouldn't you like to stop that noise? You can do it by using

NEW PROCESS GEARS
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They last indefinitely too.

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LACE LEATHER
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REEDS AND
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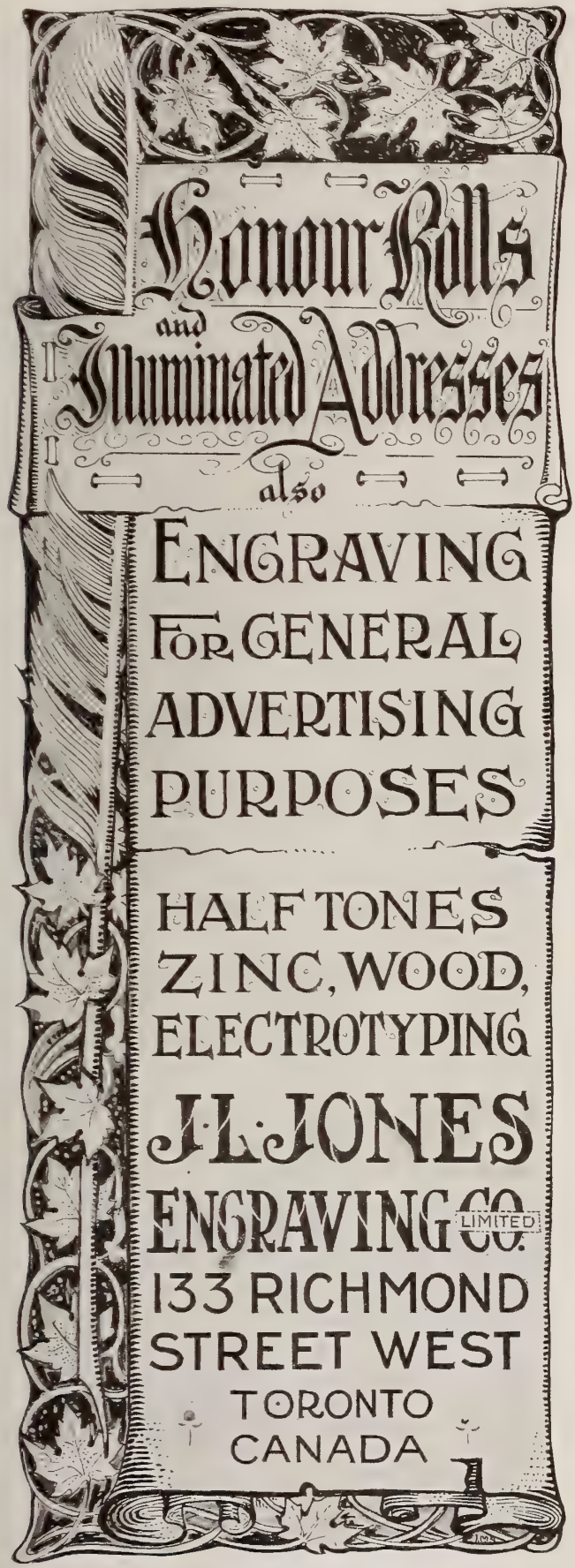
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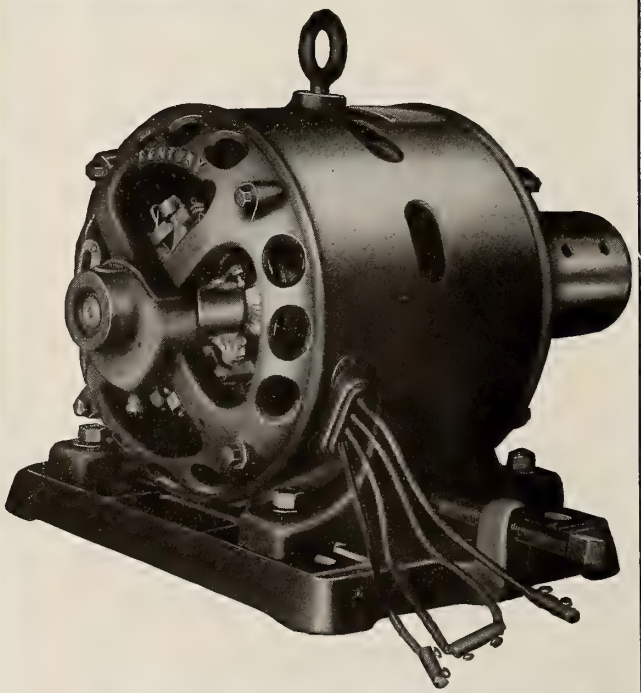
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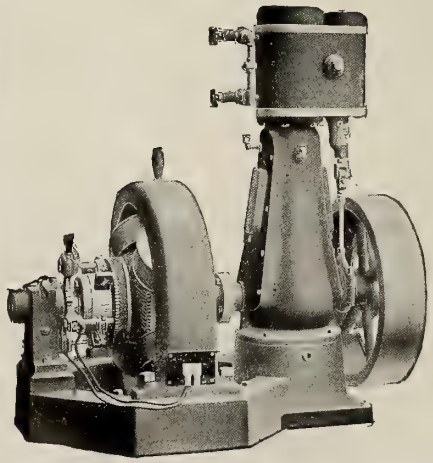


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GENERATORS FOR DIRECT CURRENT BELTED AND DIRECT DRIVEN

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A Large Manufacturer Says:

"We have installed in our several factories, for the benefit of the workers, probably 1000 oscillating fans, of which you have furnished a large number.

"The fans are a great success.

"We believe that notwithstanding the fact that the fans were not installed with either efficiency, or quality of product in view, that both have been improved, and that it has proved to be well worth the amount invested."

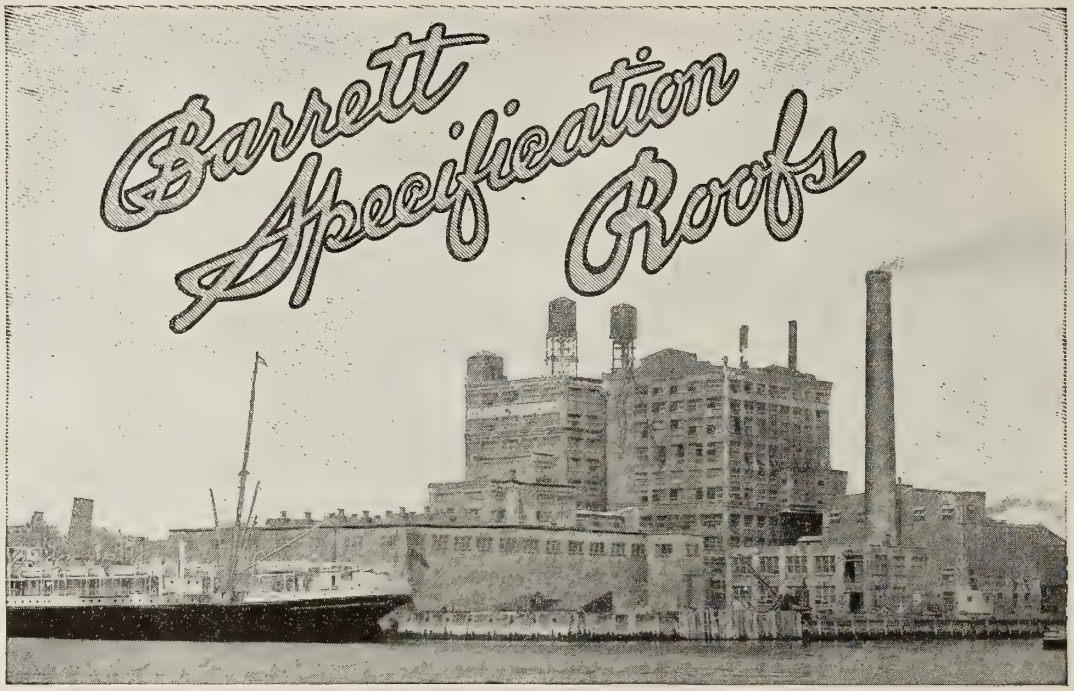
The Westinghouse line of fans comprises all types; 8", 12" and 16" Desk and Bracket; 12" and 16" Six-Blade Desk and Bracket; 12" and 16" Oscillating Desk and Bracket; Telephone Booth; Stationary and Gyrating Ceiling, Floor and Counter Column; Railway Type; Exhaust Fans, etc.

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Made in Canada



Keeping a Sugar Refinery Dry—

Barrett Specification Roof on Atlantic Sugar Refinery, St. John, N. B.
Architect: William Higginson, New York City.
Roofing Contractors: E. G. M. Cape & Company, Limited, Montreal.

THE big sugar refinery at St. John, N.B., is a splendid example of the many ways of using the marvelous water-resistant powers of coal tar pitch.

The ground floors, where there is considerable dampness to be resisted on account of the nearness of deep water, are paved with 14,000 square feet of Tar-Rok Sub-Flooring—a tar concrete which is spread directly on the ground with plank flooring bedded in it, giving a strong, solid, dry and inexpensive basement floor.

Between the floors, to prevent leakage from one floor down to the next, are 170,000 square feet of Barrett Specification Waterproofing consisting of five layers of felt, all mopped and cemented together with pitch.

The roof consists of 70,000 square feet of pitch and felt laid according to The Barrett Specification.

The Tar-Rok floor and the Waterproofing will last as long as the building stands, without any attention.

The Barrett Specification Roof will withstand wind and weather for upwards of twenty years without the expenditure of a penny for care of repair. It is the least expensive of all permanent roofing to build and as its maintenance cost is nothing, the unit cost, that is, the cost per square foot per year, is far below that of any other roofing known to man.

Barrett Specification Roofs rank as slow burning construction, take the base rate of fire insurance and are approved by the Underwriters' Laboratories.

Special Note We advise incorporating in plans the full wording of The Barrett Specification, in order to avoid any misunderstanding. If any abbreviated form is desired, however, the following is suggested:

ROOFING—Shall be a Barrett Specification Roof, laid as directed in printed Specification, revised August 15, 1911, using the materials specified and subject to the inspection requirement.

A copy of The Barrett Specification, with roofing diagrams, mailed free on request.

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ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVII. TORONTO, MAY, 1916 No. 1

INDUSTRIAL CANADA

Issued monthly as the official publication of the Canadian Manufacturers Association (incorporated), and devoted to the advancement of the industrial and commercial prosperity of Canada.

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"Let Us Then Be Up and Doing."

THE refusal of the Government to have anything to do with conscription, or even with such a modified form of conscription as national registration, puts Canada in the class of back numbers, where, hard as it may be to say it, she properly belongs.

War is the most serious business in which any country can engage. The herculean struggle now in progress is the most serious business in which the world has ever engaged. Upon every nation that is a party to it there is imposed a sacred duty to use its utmost endeavors, to avail itself of every resource, in order that a speedy and conclusive victory may be assured. Belgium and Serbia have immolated themselves upon the altar of freedom; France has given her all, and is fighting to the last man. Russia is shedding the blood of millions of her manhood in order to detract from the force of the blows that Germany is aiming at the Western Front, where a handful of our Canadians are engaged. Britain, slower perhaps to move at first, is now amply fulfilling her obligations to civilization.

But what of Canada? Are we really in the war or are we just playing at it? As individuals, as a nation, are we shaping our actions intelligently and in conformity with any recognized plan that will bring us direct to the goal, or is it a case of go as you please and profit while you may? England has thousands upon thousands of women working in munition factories, on the farms and in tramcars. Canada has thousands of women who would gladly engage in such work, but they find the way to these forms of employment blocked by able-bodied men. In England men enlist as munition workers and go where those in authority say they are most needed. In Canada the munition worker is looked upon as legitimate prey for the recruiting sergeant.

Our intentions are good. We intend to raise an army of 500,000. But we purpose doing it by methods that more experienced countries have long since discarded. What will it avail us, what will it avail the allied cause, if we succeed in vindicating a theory or a principle by producing the men only after the need for them has passed? The fight will be either won or lost. If lost, then nothing could be more tragic for us than the knowledge that it was our unpreparedness that enabled the enemy to snatch his victory. If won, we would still have the uneasy feeling that greater activity, more unity of action on our part would have hastened our triumph and obviated the sacrifice of valuable lives.

These are times of progress and of change, times when the fit shall survive and the unfit shall perish. True of production, true of business, this is especially true of modern warfare, in connection with which the world's keenest scientists are constantly at work devising new methods of protection and of destruction. The gigantic scale upon which operations are being conducted at the front calls for thorough organization and the maximum of efficiency, all the way from the firing line, back through the links of transportation to the workshop, to the farm and to the mine. Can Canada afford to do less than her best? Can she justify herself in condoning laxness or inefficiency so long as it is within her power to improve things? Can she view with equanimity the possibility of defeat, when the only obstacle to her whole-hearted and badly-needed co-operation is a prejudice that intelligent action would speedily correct?

These are serious questions, that demand thought of a more serious kind than that which is circumscribed by political considerations.

On the Threshold of a New Trade Era.

BUT every cloud has its silver lining. If the war has imposed upon Canada stern duties, the fulfilment of which will call for unlimited sacrifice, it has also brought within her reach magnificent opportunities, the realization of which will ensure unlimited prosperity.

The conferences that are being held among the Allies for the discussion of economic problems have in view the effecting of fiscal arrangements that will conserve their markets as far as practicable for their mutual enjoyment. In other words, the common interest which now binds Britain, France, Russia and Italy together in a military and naval sense is to be perpetuated so as to ensure their working together in the closest possible harmony in matters of trade. France, for example, will naturally want to supply her own needs as far as it is within her power to do so, and her tariff will be adjusted with that object clearly in mind. For her necessary imports, however, Britain, Russia and the other Allies will be given first call by means of preferential duties. When their capabilities for supply are exhausted, neutral countries will be given a chance to furnish the balance. As for enemy countries, their trade will not be wanted, and if they secure any of it at all, it will only be by overcoming tariff handicaps that will make the business unprofitable or unattractive.

Such at any rate is the plan which it is proposed to work out on a reciprocal basis among the present Allies. Unquestionably there will be difficulties in the way, not the least of which will consist in reconciling the average Britisher, who is saturated with free trade doctrine, to a scheme of graded tariffs whose maximum schedule will necessarily mean fairly high protection. Many are of the opinion that the plan should be extended so as to make the encouragement of inter-Imperial trade our first care. That, of course, would be wholly desirable from Canada's standpoint, but on the part of the United Kingdom it would mean the acceptance of a four-schedule tariff instead of a three-schedule tariff, and remembering her traditional dislike for duties of any kind, it might be wise to refrain from asking her to swallow too large a dose. If the Overseas Dominions press the point, certain interests in the United Kingdom are sure to counter with a proposal to compromise on the basis of free trade within the Empire, which in turn would give rise to serious political issues in this country.

If such a problem should be presented to Canada, our first thought would naturally be to reject it because of the industrial sacrifices it would involve. There is no question, of course, about some of our industries being unable to stand up under terms of even competition with British industries. It is conceivable, however, that the advantages to Canada in other directions might more than compensate. We do not say they would, but if affirmative proof of a thoroughly convincing character could be provided, then Canada would be standing in her own light if she failed to assent to the sacrifice.

Under present conditions, in competing with the United States for export trade, Canada is almost always at a serious disadvantage. She is overshadowed by her rival in the capitalization and output of her industries, besides which her production is not nearly so highly specialized. To be compelled to meet her on even terms in the markets of the world means that Canada's turn at the business comes only after the United States has had all she wants or can handle. But give Canada a tariff preference of five per cent. in the markets of Great Britain, France, Italy and Russia, and the situation is entirely altered. Or looking at it another way,—let Canadian wheat enter England free as against a duty of a few cents a bushel on United States wheat, and farming in our North-West at once takes on a new importance. The first contingency would be followed by a big influx of United States capital to add to Canada's manufacturing equipment; the second by a steady immigration of United States farmers to build up our agricultural production.

The enormous extent of the markets to which reciprocal preferential trade among the Allies would give Canada access upon terms more advantageous than the United States would enjoy is not sufficiently appreciated by most Canadians. Great Britain, with her Overseas Dominions, Crown Colonies and Dependencies, has a population of 425,000,000, Russia 165,000,000 France and her Colonies, including Algeria and Tunis, 96,000,000, Italy 35,000,000, Japan 55,000,000, Belgium 7,500,000, Serbia 3,000,000, Montenegro 230,000. Protection in the home market is undoubtedly important, but the benefits accruing from tariff advantages in an export market totally 785,000,000 people, or nearly one-half the population of the entire world, should not be overlooked. The United States owes its phenomenal development to the fact that, secure in a highly protected home market, it has been able to offer its surplus production to the world with only such tariff handicaps as apply equally to all its competitors. Let it now be subjected to a serious handicap in that portion of the world's market represented by the above figures, and let that handicap operate in favor of Canada, and it is not unreasonable to assume that what has been the experience of the United States will become the experience of Canada, and that instead of the United States overshadowing Canada, Canada will overtake the United States.

By all means let us concentrate every effort upon winning the war, but amid the sorrows and privations that the struggle brings home to us let us not forget that our sacrifices will not be in vain, that brighter days are coming, and that out of it all there will arise a better, a richer and a mightier Canada.

The German Trade Menace.

ACCORDING to travellers from neutral countries who have recently returned from visiting Germany, the world is to be afforded another striking illustration of Prussian efficiency immediately the war is over. We are to be shown that all the while this war has been in progress Germany has been piling up manufactured goods against the day when her ships would once more be free to sail

the sea, and that she will be able to strike just as strong a blow for the recovery of her export trade as she was at the beginning of the war for the acquisition of Belgium and parts of France.

The story that follows, taken from the Birmingham *Daily Post*, is vouched for by a Danish merchant upon his return from an extended business trip through some of Germany's best industrial districts.

Germany is said to have foreseen (1) the cutting off of practically all her export trade and the loss of her overseas customers; (2) the stoppage of her import of raw material, and the consequent exhaustion of the stocks of such material on hand; (3) the need of an immediate and vast import of raw material as soon as peace was declared; (4) the need for an immediate resumption of export trade on a huge scale so as to pay for the imports of raw material without depreciating the exchange value of the mark.

Under Government auspices a conference of industrial and financial men was called after the war had been in progress only three weeks. At this conference a plan was drawn up under which manufacturers were to be aided financially by the State to keep their works open with the object of accumulating stocks of the goods which Germany in peace times exported.

The expectation then was that the war would be of short duration. When it became apparent that the struggle would be a protracted one, and that the Allies would attempt to give effect to an anti-German trade policy upon the conclusion of peace, it became doubly important for Germany to carry out her original plan, and to make its application as extensive and as overpowering as possible. An additional incentive in that direction was soon provided by the need for finding employment for partially incapacitated soldiers as they returned from the front, and of course the more factories that were kept open the more readily these unfortunates could be taken care of.

So more conferences were held, with the result that the State, acting through the banks, determined to finance the producers still more liberally. Provision was made that would enable factories to be operated indefinitely, regardless of the loss of foreign markets and the decreased home demand. This was brought about by making advances to manufacturers of ninety per cent. of the current value of stocks of goods manufactured and placed under State control. When the money thus received was exhausted in producing more goods, the manufacturer mortgaged the second lot for another ninety per cent. and placed it under control, and so on indefinitely.

By January 1st, 1915, according to bank records, the advances on manufactured goods hypothecated to the State amounted to $85,000,000. By January 1st, 1916, the advances had reached the staggering total of $1,500,000,000. What it will be by the first of next year, if the war lasts that long, Heaven only knows.

The goods thus accumulated are regarded as a special dumping store, to be slaughtered in foreign markets the moment that the declaration of peace makes it possible to do so. Germany confidently believes that the demand in neutral countries for all sorts of goods, especially the kind she is making, will be tremendous. She also calculates that at the low prices she will offer her goods for sale, the world will absorb her stocks quickly, thus accomplishing for her the double purpose of enabling her to replenish her stocks of needed raw material and at the same time demoralizing the trade of her competitors. It will even pay her to offer all her dumping store at ten per cent. below factory cost, if she can thereby unload it in the first six months of so-called peace, for after all the war is being largely fought by Germany for world trade, and what is ten per cent. on $1,500,000,000 compared to the cost of the war itself?

If all this be true, then Hindenburg's nutcracker tactics in Poland have nothing on the German manufacturers' dumping campaign for thoroughness and menace. Even if it be only partly true, it affords an additional and a very powerful reason why no time should be lost by the Allies in bringing into operation their scheme of reciprocal preferential trade and making it as drastically anti-German as the signatories will stand for.

The Rag Bag.

THE good old rag bag which used to hang behind the attic door is once more coming into its own. To say nothing of woollen rags, which quite legitimately make up a portion of the material in garment cloths, cotton rags are assuming an importance in industrial life which has not been in evidence since wood pulp made its appearance. And not only rags, but old papers, particularly of the strong white grades, are in firm demand. The paper-makers of Canada and the United States are in sore straits for raw material, and both Sir George Foster and Secretary Redfield have issued press bulletins and posters urging greater saving of waste rags and papers.

Under stress of extraordinary conditions, women's clubs, patriotic organizations and others have entered into the work of collection, with remarkable results, but the Department of Trade and Commerce in Ottawa is still in receipt of many letters stating that there does not seem to be any well-developed channel of disposal of household collections. The fact probably is that the writers have overlooked or mistrusted the humble "rags, bones and bottles" man. Unfortunately, his reputation is not good. He is usually of a very poor class of labor, and so often of an indeterminate sense of property rights that he has been barred from back yards and back doors. In many cases valuable waste is burned simply because the itinerant cannot be trusted.

Those who are best qualified to speak, however, state that the rag man is the logical collector. The trade does not admit of high wages nor of any great degree of civic control. It would be well if householders and the city authorities co-operated in the sorting, on the one hand, of the different classes of household waste, and the packing, on the other hand, of the materials which are of practically no value to the individual, but of considerable importance in the aggregate. To keep unidentified persons off private property a prominent paper manufacturer suggests a sys-

tem of cards, similar to those given out by ice companies, to be used as signals to rag pickers. Large junk dealers, or even the newspapers themselves, might publish current prices for different classes of waste.

The situation brings out again the conclusion which is being drawn by so many captains of industry since the beginning of the war, viz., our people are not sufficiently thrifty; as a nation we do not co-ordinate our industries, nor do we make provision for the complete utilization of materials.

More Sheep.

THE hero of the most popular of nursery rhymes—the little lamb—figures most prominently in the thrift and production campaign which the Dominion Government is carrying on. As a producer of revenue in connection with farming or by himself, he stands high. He costs little originally, requires less attention, except at certain seasons of the year, than almost any other animal, and needs little protection from the weather. He produces both wool and mutton, both of which are in great demand; he destroys weeds and enriches the soil. Truly a noble animal in these war times!

The 1914 census showed 2,058,045 head of sheep in Canada, shearing about 14,200,000 pounds of wool. In the same year there were imported from the United States 131,931 live sheep for slaughter, outside of the imports of mutton from the sister colonies. There was imported also a quantity of wool aggregating 9,516,579 pounds—about two-thirds as much as was produced in the country. The Government officials hold that there is no reason why Canada, with her pasture lands and with the opportunities for mixed farming which undoubtedly exist, should not cease to be an importer of mutton and wool, and take a more important place in the world's markets in these commodities. The development of the textile industries is undoubtedly hampered by the lack of abundant supplies, and subsidiary industries are also lost.

Several organizations in the United States are taking up the problem of wool and mutton shortage. Whereas in 1909 the country produced 328,000,000 pounds of wool, in 1915 it produced only 288,000,000 pounds. A circular which urges the farmer to keep sheep points out that "the average production of wool in 1900-1910 was 320 million pounds; the average population of the United States in the same period was 85 millions. In 1915, the wool production was 288 million pounds; the estimated population 100 millions. Population will continue to show an increase. If sheep production continues to show a decrease, what will be our condition for meat and clothing?"

Canada's duties to herself and to the Empire are certainly no less than those of the United States to herself. The consumption of wool in this war is enormous. The London *Statist* estimates it as 36 pounds of new wool per man per annum, or 540,000,000 pounds per annum for 15,000,000 combatants. Britain's 4,000,000 men will consume 144,000,000 pounds per annum, which is 24,000,000 pounds in excess of the total British production. From Australasia, South Africa, and South America, which are the large exporters, there is available annually about 1,280,000,000 pounds for the clothing of the civilian population of the Entente nations and neutrals. Home consumption adds considerably to this quantity, of course, but the *Statist* concludes that "the armies of Europe, together with the civilian requirements, have fully kept pace with production; in fact, the war has no doubt been responsible for shifting all surplus stocks that existed previous to the outbreak of hostilities. As we contemplate the future, we are satisfied that the requirements of the world to-day are fully on top of supplies, and no one need be surprised, if the war continues another twelve months, to see a still more pronounced shortage of raw material."

The cow put Canadian agriculture on its feet a generation ago, and it may be that the sheep will now have his day. The Live Stock Branch of the Department of Agriculture is deserving of the greatest praise for the earnest efforts it is making to induce the farmers of the Dominion to keep sheep. Bulletins on the selection, breeding and care of sheep have been issued, and an educational campaign, with prize competitions, is being carried on with the idea of improving the quality of fleeces and mutton. The work should prove most valuable.

Daylight Saving.

THERE is everything to commend, and, so far as we can see, nothing to criticise, in the plan for economizing daylight. Like many other reforms, it was rereceived with skepticism at first, but the experience of municipalities that have tried it all goes to show that it is simple of application and beneficial in its results.

The daylight hours are the natural time for work and recreation—the hours of darkness the natural time for sleep and recuperation. To sleep while the sun is shining is reversing the order of nature, just as it is also reversing the order of nature to work after the sun has set. To some extent the organization of society in these modern days demands a departure from what would be the natural rule, as in the case of bakers, printers and dairymen. But such occupations are the exception, and point to nothing illogical in the contention that those upon whom no such obligation rests should conform as closely as possible to the dictates of nature.

Thrift is always desirable, but never more so than in war time. Daylight saving means national economy, for it reduces light bills and fuel bills. By enabling the worker to indulge in healthy outdoor recreation, instead of leaving him dependent upon indoor amusements, it opens the way for better care of the body and for sound and refreshing sleep. These in turn give him renewed energy for the work by which he lives, to his own profit and to the profit of his employer.

Objections to the proposal are for the most part unthinking. The six o'clock riser rebels at the thought of having to get up at five. The eight o'clock diner is horrified at the prospect of having to dine at seven. As a matter

of fact, neither one will have to do anything of the kind. The early riser will still rise at six, and the late diner will still dine at eight. All that has to be done is for every one, at a given time (preferably on a Saturday night, for that will leave Sunday for adjustment) to move the clock forward one hour and then forget all about it. Things will run on just as before; the factory whistle will blow at seven and six; there will be cars to take people to work, and restaurants for them to eat in; the baker, the postman and the iceman will call as usual; the moving picture shows will run full blast as before. But, there will be one hour more daylight in the evening, one hour more for gardening, for sports, or for social visiting, one hour more for the things that make life worth while.

The main thing to guard against is lack of unanimity. If all interests in a municipality agree to make the change, the success of daylight saving is assured. If one important interest adheres to the old schedule, its success is imperilled. In a smaller degree the same applies as between municipalities. If all work together it simplifies intercourse. If different schedules are in operation, it leads to confusion. And it is for that reason that it would be preferable to settle the matter by Federal legislation, rather than leave it to municipal initiative.

Municipal Affairs.

DISRAELI has remarked that democracy has its worst trials in municipal affairs, where men of large calibre are not likely to enter, and where the eye of the public is prone to overlook details of management. Certainly, to judge by the experience of cities large and small in America, the rule " of the people " has had many a hard knock. " The boys " have learned how to " beat the game," and dishonesty and corruption have crept in over many a reform. A fool-proof and burglar-proof form of city government is the goal towards which innumerable voters' associations, civic leagues and even nation-wide organizations are striving.

It would appear that the public would be perfectly willing to submit their municipal arrangements to the absolute control of one man—if he were honest. Efficiency would be a desirable, but a secondary requisite. It is more pleasant to lose money than to have it stolen. The City Manager plan, with possibly a system of recall as a string, seems to appeal in many quarters. The Board of Control is often a step in this direction.

Municipal activities in different parts of Canada during the past winter have thrown new light upon these questions. St. John, N.B., decided by a large majority in a referendum to retain its commission form of government. Toronto has handed over its financial departments to a financier of the very highest standing, at the largest salary paid to any civic official in the Dominion. Montreal and Ottawa are still in the midst of trials with their respective provincial legislatures.

Every year Montreal tinkers with its charter, and the railways and Quebec hotels are very busy while Montrealers by the score and the hundred battle for the favor of the Private Bills Committee.

This year the aldermen were first on the ground with a bill which would increase the number of wards from 31 to 35, increase the indemnity of each alderman from $1,000 to $1,500, extend their term of office, and abolish the Board of Control.

A composite committee consisting of representatives of a large number of public bodies, which had worked for several months upon the modifications to the City Charter, presented an amendment to the aldermen's bill, providing, among other things, that the city be divided into five large electoral districts, each of which would elect three aldermen, thereby reducing the number from thirty-one to fifteen; that the Board of Control be maintained, and that the Mayor, as a member of the Council, be allowed only a casting vote, instead of two votes as heretofore.

In part, at least, the demands of the composite committee were upheld, and, roughly speaking, the demands of the aldermen were rejected. A compromise was effected by Sir Lomer Gouin, by which the number of aldermen was reduced to twenty, one from each of twenty wards formed by uniting existing wards, the new wards having approximately the same number of electors in each; and the aldermen's prayer for an increase of indemnity, with an extension term of office, was thrown out, as was their request for the right of the Mayor to suspend employees without consulting either Board of the administration.

It is hard to say how Montreal's new government might be classified. It might be argued with good reason that a tendency is shown towards the eradication of the ward politician, and the development of civic legislators and administrators who must depend for election upon their records in the eyes of an increasingly large constituency.

Ottawa newspapers are wrathy at the Private Bills Committee in Queen's Park for the treatment accorded to the city's bill, which had been drawn up upon the results of a referendum.

Tax reform, proportional representation, women suffrage, city manager plan and civic abattoir proposals all went by the board. In this connection the Ottawa *Citizen* says:

"In brief, the committee refuses to permit Ottawa to enjoy certain reforms which the people have voted for, on the ground that the rest of the province is not enjoying them, and at the same time tells Ottawa that it has no say in its own thoroughly domestic affairs which have no relation in any way to the rest of the province! How long will self-respecting, full-grown municipalities in Ontario submit to such autocratic dictation at the hands of the Legislature? Surely cities of one hundred thousand people are entitled to municipal home rule!"

The Private Bills Committee may have had reasons unexpressed for not agreeing to the proposals It would seem a pity, though, that Ottawa cannot go ahead with her experiments. It is seldom that a city can boast the public

interest in municipal affairs that would give rise to such a "progressive" programme. Canada needs a little more thought and study, a little more daring, in her municipalities.

St. John, Toronto, Montreal and Ottawa have all shown the benefits of these qualities. Let the good work go on.

Investigating the Railways.

INVITATIONS are out to Members of Parliament for The Canadian Northern Railway's Third Annual Holdup, and as usual everybody is accepting. Emboldened by the success of its rival, The Grand Trunk Pacific is putting on a Charity Bazaar, and the same select circle of legislators is invited to be on hand with the money but minus the razors.

As forecasted by the Minister of Finance, both functions will yield a handsome return. He tells us there is nothing for it but to give the railways temporary relief. Only two other courses are open: to allow them to go into the hands of receivers, which would not be good for Canadian credit, or to nationalize them, which the Government is not yet prepared to do. In deciding in favor of temporary relief, however, he tells us that a commission will be appointed to investigate the general railway situation in Canada, in order that full and reliable information may be available upon which to base a future policy.

In taking this action the Government is well advised. The only criticism we have to offer is that the investigation should have been ordered long ago Had the probe been started when the Canadian Northern first began to fly signals of distress, Canadian credit would not have been strained abroad as some claim it has been strained, besides which there would have been a tidy little sum in Canada's treasury that would be exceedingly useful just now for war purposes.

As against this criticism the Government may very properly point out that on two different occasions the people of Canada endorsed the building of the Transcontinental and incidentally the Grand Trunk Pacific. These enterprises, therefore, were brought into existence in conformity with the wishes of the people and, subject to faulty management, they are entitled to look to the people for support until such time as they are self-sustaining. Canadian Northern construction was similarly encouraged, not directly by the people, but by their representatives in our Legislatures and at Ottawa, through cash and land subsidies and through bond guarantees that made it possible for the promoters to secure the necessary capital. From these standpoints it is hardly fair to argue that the railways should be left to get themselves out of the hole as best they can.

But the present is no time to cry over spilt milk. Nor is anything to be gained by haggling over questions of responsibility. What now concerns us is how can we best deal with the situation as we find it, and give fair treatment both to the railways and to the public.

In a resolution passed by the Canadian Manufacturers Association a year ago, certain features were set forth that the investigating commission should keep clearly and constantly in view. Adapting the argument of that resolution to the present situation, it should first of all be stated that there is a widespread belief that we have more lines of railway in Canada than our present needs demand. Sometimes, we fear, Parliament and the various Legislatures have issued railway charters that have been used mainly for speculative purposes. In some instances, through lack of proper care and foresight, they have voted subsidies to or guaranteed the bond interest on lines that have not served new territory or population, but that have simply paralleled other lines, thereby entailing a drag on the profitable lines with no corresponding benefit to the public. Upon these points complete information is indispensable before reaching any decision with regard to nationalizing our railways.

It is also desirable to ascertain if agreements exist among common carriers to the detriment of the business of the country. Regulations and arrangements are supposed to exist between the railways and water carriers that may make, if they do not already make, ineffectual in any competitive sense the enormous sums of money Canada is spending on her canals, harbors, and other waterways. One thing is certain, and that is that among shippers and the general public there is a growing feeling of irritation and unrest in connection with the numerous applications of the railways for advancing freight rates. Such a condition is not only disturbing to commerce, but is inimical to the interests of the railways themselves.

Another necessary feature of the investigation will be the capitalization of railway enterprise in its relation on the one hand to the stock subscribed and on the other to the investment and the working capital required.

Let the work proceed, and proceed at once, and let it be in the hands of the best men, irrespective of politics, language or vocation, whose services the government can command.

Why Not Receiverships?

WOULD it be such a serious matter after all if the two junior transcontinentals were allowed to pass into the hands of receivers? There is a natural aversion to such a procedure, of course, but then it may be a preferable alternative to a continuance of the policy of bolstering up shaky fabrics with further governmental support. We hesitate at receiverships largely because we are unfamiliar with them. Over in the United States, no fewer than 75 railways, with an aggregate mileage of 38,661 miles, and capital stocks and funded debts totalling over two billion dollars, are being operated in this way, and that without damaging the United States' credit to any appreciable extent. The war itself has proved to be much less of an evil than the world anticipated; and the same, in a different way, might prove true of receiverships.

EFFECT OF AUSTRALIAN INCOME TAX

How It Applies to Agents of Non-resident Manufacturers and Other Foreign Principals.

Canadian manufacturers, who sell or contemplate selling their products in the Commonwealth of Australia, should take careful note of the application of the new income and assessment Acts, which received the assent of the Governor-General last fall.

In their local application, every resident person in receipt of £157 or upwards per annum is liable to pay income tax at such rates as are declared by the Parliament of the Commonwealth. Companies and absentees must pay on all their income derived from Australia. Further, every person who receives wages over 10s. a day in continuous employment or whose total earnings amount to £157 or over in any year is required to make a return, but equitable abatements are allowed to owners of houses in respect of necessary outlays for repairs, insurance, etc. Persons using their own land and houses for residential and for business purposes combined must ascertain the actual capital value of the portion not used for the business, and where used for residential purposes only they must return as income 5 per cent. of the capital value of the whole.

A noticeable feature of the enactments is the determination of the Legislature that foreigners shall not escape taxation. Accordingly, agents for non-resident manufacturers and other foreign principals under Section 15 of the principal Act are required to furnish a return showing the total amount of sales effected by or through their agency during the year for each principal, in addition to their own individual return, and in such case "the principal shall be deemed to have derived from such sale a taxable income equal to five pounds per centum upon the price at which the goods were sold.

The amending Act, Section 3, provides that the profits of a company deriving income from a source in Australia and from a source outside of Australia shall be taxable *pro rata;* and under Section 4 of the amending Act it should be noted that "goods shall be deemed to be sold in Australia on account of a person not resident in Australia, if such person in Australia receives a commission in respect of the sale of the goods, or is paid a salary for obtaining orders for or for influencing the sale of goods."

The exemptions are *inter alia* the income of trades unions or of registered associations of employers, or employees, religious, scientific, charitable or public educational institutions, etc. The income from personal exertion earned by persons in active service during the present war is excluded.

Trade incomes shall be returned yearly as nearly as possible at 30th June, based on the annual balance sheet and trading and profit and loss accounts made up to a date as near thereto as possible.

Copies of the Acts referred to are on file at the office of the Canadian Manufacturers' Association, where they may be consulted by those interested in the legislation.

A RECONSTRUCTION EXPOSITION.

Paris Now the Scene of an Exhibition of Building Materials.

Believing that the time has now come to make preparations for the reconstruction of destroyed towns and villages, to plan public edifices and dwelling houses, to provide materials of construction and secure sources of supply, the General Association of Hygienists and Technicians of France are holding a Reconstruction Exposition in the "Jeu de Panne" Building in the Tuilleries, Paris, which will extend from May to August.

Exhibits are arranged in four groups, divided into twelve principal classes. In the first sketch are to be found views, photographs, statements, sketches, etc., of the destroyed towns and villages; plans in great variety of model cities, etc.; plans of thoroughfares, squares, parks, playgrounds, etc., and everything to do with roads and pavements; photographs, statements and sketches of the aesthetic side of town construction; exhibits of all devices for improving sanitary conditions.

The second group deals with public edifices of all descriptions, dwellings and rural and industrial constructions. Goup III. has to do with materials and methods of construction; and group IV. with legislation and the principles and application of rural and urban economics.

Canadian manufacturers of building supplies will be interested in knowing that a special American section has been formed. Exhibits will be admitted free from all duties, while the charges for showing samples will be quite moderate. It is pointed out that the exposition is not simply a show, but that actual buyers from all over Europe, ready and anxious to buy, will be there. It seems a great opportunity, when the demand is so strong, to establish a connection with this new market.

TRADE MARKS IN AUSTRALIA.

Suspension of Those of German and Austrian Origin Registered in the Commonwealth.

Through the courtesy of Egerton R. Case, registered patent attorney, Toronto, INDUSTRIAL CANADA has been placed in possession of copies of the *Commonwealth of Australia Gazette*, containing lists of trade marks of German and Austrian origin, the registration of which has been suspended in Australia.

By a proclamation made by the Governor-General on Dec. 8, 1915, under the Customs Act, the importation was prohibited, except with the consent in writing of the Minister of State for Trade and Customs, of goods upon or in connection with which there is used a trade mark the proprietor whereof is declared by the Attorney-General to be in his opinion a subject of a State at war with the King within the meaning of the *Patents, Trade Marks and Designs Act, 1914-1915.*

Under the authority of this Act and regulations, the Attorney-General has specifically designated a long list of trade marks, upon which he orders that "the registration and all the rights conferred by the registration of the said trade marks shall, unless and until I otherwise order, be suspended so far as regards and in favor of (1) the Minister of State for Trade and Customs, and (2) such person or persons as may from time to time be approved by the Attorney-General of the Commonwealth upon such terms and conditions as the Attorney-General thinks fit."

In a word, the protection afforded by the registration of several hundred more or less well-known trade marks in Australia, is now at an end, and, with the approval of the Attorney-General, any manufacturer can make and sell in Australia commodities under these trade marks. There may be several excellent openings for Canadian manufacturers in this direction. Any such, who think they might be interested, are at liberty to consult the lists of suspended trade marks at the office of the Canadian Manufacturers' Association, Traders' Bank Building, Toronto. Besides giving information about the former owners of the trade marks, the lists contain exact reproductions of them, which should be serviceable.



A "MADE-IN-CANADA" STEAMSHIP
One of the Lake Ontario Car Ferries, which was built in a Toronto Shipyard

A CANADIAN MERCANTILE MARINE

An Address Delivered on April 19, 1916, before the Montreal Branch of the Canadian Manufacturers Association

By HON. LT.-COL. THOMAS CANTLEY
President, The Nova Scotia Steel & Coal Company

MARINE transportation at the present time is a matter of vital interest both to Canada and the Empire. The losses of British merchant shipping tonnage during the past twenty months of this war has amounted to more than two and a quarter million tons—the losses during several months averaging over two steamers per day. We have recently lost more shipping in one week than the shipbuilding resources of Great Britain produces in three months. These losses, coupled with the transportation demands of Britain and the Allies, and the inevitable law of supply and demand, has caused freighting rates and the value of ships to advance from five to fifteen times over those formerly paid. So long as the present war and the transportation problems arising out of it continue, no relief can be expected from outside sources.

Canada's Present Position.

The history of Canada from its first discovery until the present time is largely a history of transportation problems. The movement of natural products in this country is on a large scale, and nature has devised a wonderful system of waterways. Both on our Atlantic and Pacific seaboards we have an enormously long coast line, with a succession of magnificent harbors and large supplies of bunker coal on tidewater on both coasts. Communicating with the Atlantic seaboard we have a river and chain of lake communication penetrating fully 2,500 miles inland. On the other hand, so far as long transportation is concerned, enormous difficulties have been overcome and great success has attended our railway enterprise, but our transportation development has been uneven and unbalanced, and this fact is of serious import at the present time.

If our water transport were as well developed and as skilfully managed as are our railway transportation lines, Canada would command an immense carrying trade between Europe and the Far East. Owing to our lack of ships, however, this trade must be divided with others.

It has been stated that a quarter of a million Canadians are on the pay rolls of the various railway systems of Canada, and that more than a million persons are dependent on that industry for their support. The Canadian producers who support these railways have substantial control over the rates and conditions under which their products are carried, but so soon as their goods reach the seaboard that control practically ceases, for the ocean traffic is controlled by others than Canadians.

Canadian Shipping.

On the Great Lakes Canadian shipping amounts to only a small fraction of the lake tonnage. On the ocean, Canadian ships carry less than one-tenth of the produce sent out of Canadian ports, while very large quantities of other Canadian products pass through American ports. It is estimated that before the war Canadians were paying over $50,000,000 yearly in ocean freights, almost all of which went into the pockets of foreign shipowners.

If we assume that there will be a very large volume of immigration to Canada after the war, doubtless a considerable proportion of this influx will settle on the land, principally in the West, and at a reasonable time thereafter there should and undoubtedly will be a very large increase in our exports of agricultural products. Of the four to five hundred thousand Canadians returning from the battlefront, when the enemy is defeated, a large number both by previous training and incli-

nation will expect to find employment in the various workshops of the Dominion.

The experience which a very large number of artisans in Canada are now gaining in the manufacture of munitions will insure that, on the cessation of hostilities, Canada will have a much greater body of trained mechanics than at any time in its past history, and an outlet must be found for the product of the Canadian workshops as well as the Country's agriculture labor, from which it will follow that the overseas trade of the Dominion will largely exceed that of any period previous up to the outbreak of the great war.

Railway Transportation Policy.

The success of our railway transportation system has been due largely to the vigorous and resolute policy of the Government in the matter of railway development, which contributed the Intercolonial Railway and latterly the Transcontinental system—our investment in which exceeds $200,000,000. Public aid has been given to private railway systems to an even greater extent, and guarantees of bonds have been made to an amount closely approaching $300,000,000. On the other hand the rates are under public control. In short, the Canadian railway system may be said to have been the object of a well devised national policy, which aimed at a general development of the country, and the result on the whole has been successful.

Marine Transportation Policy.

As regards marine transportation we have had no such policy. We have constructed a canal system that since Confederation has cost us over $100,000,000, but the canals so constructed are open to our competitors and over four-fifths of the traffic passing through the Canadian canals originates in the United States and less than one-third of the ships using the canals are Canadian.

In addition to the expenditure on canals, Canada has spent something like $150,000,000 in aids to navigation on the Atlantic and Pacific coasts and on our inland waters. These aids to navigation are used by Americans and all the shipping people of the world in common with ourselves. We have granted bonuses to dry docks (and in so doing have acted wisely) but we have done practically nothing towards building up a ship-building industry.

Canadian Shipbuilding—Past and Present.

It is true that we have a few Canadian shipyards equipped for the building of steel vessels, but the peculiar fact is that these plants are practically all on the Great Lakes, and none are on the Atlantic seaboard. Those that we have—Collingwood, Toronto, Port Arthur— have done good work and exhibited great enterprise in the face of little encouragement, and both Collingwood and Toronto have turned out large vessels probably in every respect equal to similar tonnage constructed either in Great Britain or elsewhere.

A generation ago wooden shipbuilding was a leading industry in the Maritime Provinces and Quebec. The position of the industry at that time as compared with to-day is shown by the following figures:

Year.	Yearly tonnage built and registered in Canada	Total tonnage shown on Registry Books of Canada as at December 31st.
1874.....	90,756 tons.	1,158,363 tons.
1879.....	74,227 "	1,332,094 "
1884.....	72,311 "	1,252,737 "
1889.....	34,346 "	1,040,481 "
1894.....	21,243 "	868,624 "
1899.....	21,096 "	679,251 "
1904.....	18,564 "	682,838 "
1909.....	25,306 "	718,552 "
1914.....	43,346 "	932,422 "

These figures amply demonstrate that when the iron sailing ships and the steel steamer replaced the wooden vessels Canadian iron workers and her engineering establishments were not sufficiently advanced to allow shipbuilding to be continued under the new conditions. Had Canada's iron and steel industry been then developed even to the extent it now is there is very little doubt that many of our wooden shipbuilders would have turned to iron and steel shipbuilding, and with great advantage to the builders and to Canada as a whole.

Our Industrial Policy.

That, however, is part of the history of the past. What of the future? Personally, we have but little faith in the succes of any scheme for providing greater or more efficient transportation either through Government ownership, time charter or operation of a tramp steamer fleet, or by any other form of attempted control of ocean traffic by the Government. On the other hand, the Dominion would be justified in making some considerable expenditure by way of aiding in the development of Canadian shipbuilding at the present time. The iron and steel industry of Canada could never have reached the present output capacity save for the fostering influence of the combination of tariff protection and bounty, and I take it that we have reached the position in Canada where even the most out-and-out free trader will admit that any sacrifice made by Canada to establish the steel industry has been fully warranted by the experience of the past eighteen months, for I assume that it will be agreed that if the iron and steel industry had not been developed in this country as it was, no munition business would have been possible in Canada to-day, and in that case financial conditions in the large manufacturing centres would be quite different from what they are at this moment.

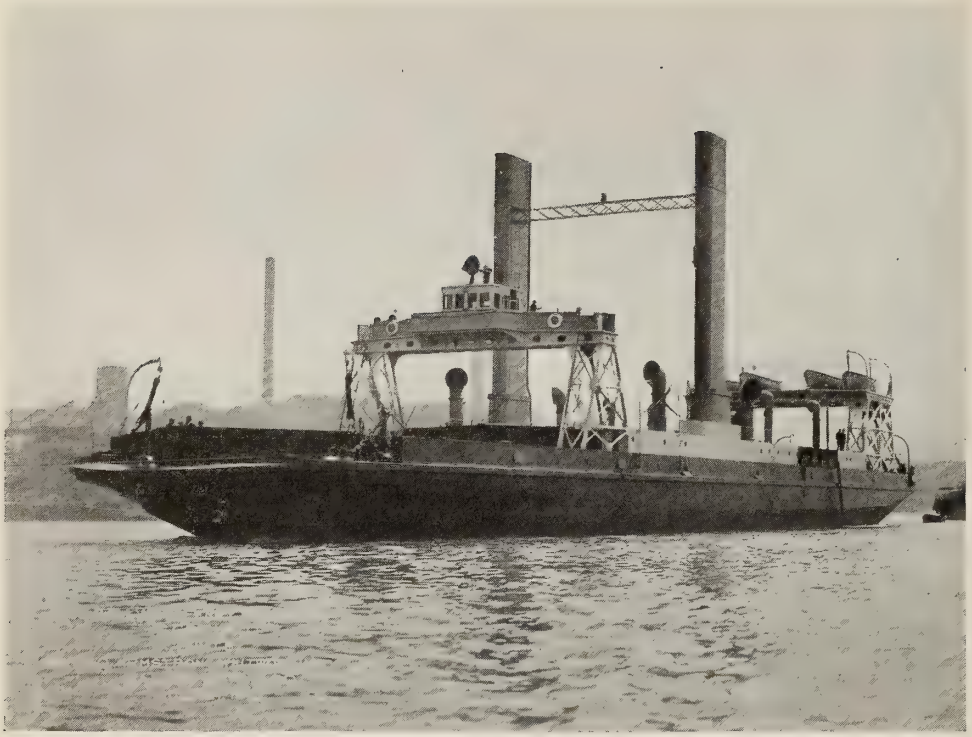
That, however, refers only to the material side of the question—the aid and succor given the Empire and the Allies through Canada's contribution of munitions is quite another matter.

Again, I am confident that when a return is made by the Minister of Finance it will be shown that the tax on the



HON. LT.-COL. THOMAS CANTLEY

President, Nova Scotia Steel and Coal Company, and 1st vice-president, Canadian Manufacturers Association.



BUILT IN ENGLAND FOR CANADIAN SERVICE
The New Car Ferry "Scotia II," used across the Straits of Canso

excess profits collected from munition and iron and steel manufacturers, will, before the war is ended, equal the entire total bounties paid out by the Dominion Government to iron and steel manufacturers from the inception of that policy in 1892 until the date when the bounties finally ceased.

Scope of Assistance.

Steel shipbuilding on a comprehensive scale can be developed if the Government of Canada is prepared to grapple with the matter in a broad and statesmanlike way. The measure of assistance which the country should extend to the shipbuilding industry is a matter for Government decision. The present bounty is entirely ineffective and out of date, having originated in the days of wooden shipbuilding when gross tonnage and net tonnage were almost identical, and when a rate of from sixty-five cents to $1.15 per net ton fairly approached the amount of duty paid on the comparatively small quantity of iron and steel entering into the construction of wooden ships.

Changed Conditions.

With modern steamers, net and gross tonnage greatly vary. A steamer may be constructed so that the net register measurement is but one-tenth the total gross tonnage, while another vessel of a different form of construction and carrying the same dead weight may have a net registered measurement of one half her deadweight capacity.

The principal of a bounty to shipping has been a long accepted one, but the method by which this is arrived at in Canada is obsolete, and the amount available too trifling to be effective.

British Shipbuilding.

British shipbuilders have a great advantage in the specialization of an industry long established. Few British yards turn out a steamer complete—the usual practice being to divide the work among numerous sub-contractors. Thus the shipbuilder builds the hull; the engines he contracts for with another firm; the auxiliary machinery from a half-dozen different makers. Winches, steering gear, anchors, chains, steel castings, engine-room signalling apparatus, lighting equipment, etcetera, from still other firms. To the construction of a modern large Atlantic freighter, therefore, perhaps fifty or more firms contribute.

In the case of Canadian yards, the great bulk of this work will have to be done by the builders themselves, but as the business progresses and its volume increases, Canada will specialize in this, as the older countries have done. This would insure the development of numerous specialized industries, increase our industrial resources, and a new and large customer would be found for the increased product of the Canadian iron and steel industry. Shipbuilding would provide employment for a large body of artisans such as draughtsmen, foremen, shipfitters and riveters, pipefitters, coppersmiths, patternmakers, boilermakers, moulders, machinists, blacksmiths, joiners, painters, loftsmen, riggers, and their helpers.

Some Methods of Assistance.

It is generally admitted that it requires from five to ten years to build up any good manufacturing organization, and this consideration makes it necessary that any scheme of assistance should be guaranteed for a period long enough for new yards to get their organization established. This assistance might take one or two or three forms, such as a rebate of duties paid on materials entering into the construction of the ship; direct aid by way of a bounty; or some combination of both these methods.

If ships built outside of Canada either in Great Britain or elsewhere are to be admitted free to Canadian registry and trade, then at least an amount equal to the duty imposed on the material entering into the Canadian-built ships should be returned to the builder. In building up our great land transportation system Canada gave direct aid, and this on a far more generous scale than is necessary to insure the rapid building up of a very considerable Canadian mercantile marine.

Naval Shipbuilding.

The great volume of mercantile shipbuilding in the United Kingdom has had one effect perhaps not fully appreciated, that is, that it enabled Great Britain to build her naval tonnage much more cheaply than other countries could do and for a much smaller cost than Britain itself could have provided it, had she not had such an enormous mercantile marine output. If the Government of Canada at any time in the near future were to decide on a policy of naval construction, apart from the building of mercantile tonnage, the inevitable result would be that so soon as the naval work originally undertaken was finished, the yards where these vessels were built would be obliged either to close down or to press the Government for orders for more warships irrespective of whether the country needed more of this class of vessel or not. In short, if

yards are established to do a naval business only, the result of necessity must be unsatisfactory.

If, on the other hand, the Government adopt a policy of ordering naval vessels and at the same time encourage mercantile construction, the business of shipbuilding would expand rapidly, and would the sooner be able to build naval tonnage for the Government at prices closely approaching those of other countries. The situation of this country at the present time makes it both desirable and necessary that the Government should deal with the matter on broad lines of public policy as has been done in practically every other civilized country in the world.

How Other Countries Assist.

During the last 20 years the commercial fleet of Japan has increased from 360,695 tons to something like 1,500,000 tons. Practically all the ocean mail steamships acquired by that country in the last five years have been built at home, and these are vessels of from 8,000 to 13,500 tons cargo capacity. This was brought about by a shipbuilding bounty of ten dollars per ton for steel steamers over one thousand tons gross, and also $2.50 for each indicated horse power developed by Japanese-built machinery.

The growth of German shipbuilding was brought about by the application to shipbuilding of the general protective system of the country, and partly by liberal subsidies, with the result that within 25 years the net tonnage of the ships registered in the two ports of Bremen and Hamburg had increased from less than 230,000 tons to nearly 2,000,000 tons.

France ten years ago established a shipbuilding bounty equivalent to $28 per gross ton for steel steamers, this rate being subjected to a gradual reduction of roughly one dollar per ton yearly—the present bounty paid being $19.30 per ton.

In Austria a bounty of $8.00 per gross ton is paid on all steel steamers constructed in that country.

The steel shipbuilding bounty paid in one year in France exceeded $2,000,000; Japan the same year paid total bounties of $997,700; Italy, $886,266; Austria-Hungary, $850,000; and practically all the European countries contribute substantial amounts in the upbuilding of their mercantile marine by way of subsidies, tariff refunds, mail subsidies, refunds of canal dues, or state loans.

Marine Insurance.

The subjects of marine insurance and the Government inspection of hulls and machinery are vital matters, and the recasting to some extent of our navigation laws is also desirable, indeed necessary. Experience abroad, particularly in the case of Norway where a system of mutual marine insurance has been in effect for many years, has proved that a rate of five per cent. was more than sufficient to cover all marine losses so far as her mercantile marine steam tonnage was concerned. That rate is approximately but one-half that charged similar tonnage engaged in similar traffic by Lloyd's and other British marine underwriters. This difference in the cost of insurance is practically a profit in itself.

A mutual insurance scheme on similar lines should now be established in Canada by which all steam vessels engaged in the coasting or foreign trade built to Lloyds, British Corporation, or Bureau Veritas classification, should be eligible for and compelled to take out marine insurance on say 75 per cent. of the vessel's value, the premium being variable as to age, character, and equipment of the ship, all tonnage being grouped in say three or four scales of classification. The Norwegian experience, as showing the rate of premiums called for over a period of years, might well be taken as a premium basis for a scheme of this character. It is also essential that the shipping interests should not be handicapped by visionary or vexatious legislation affecting the manning or working of our merchant tonnage.

Holland, Norway and Denmark.

The objection will be made that the iron and steel industry of Canada is not sufficiently developed to provide the raw material necessary for the construction of an overseas fleet in any way commensurate with the needs of the Dominion. As a partial answer to that objection it may be pointed out that other countries having practically no native iron or steel development are and have been for years engaged in the construction of steel steamer tonnage, notably Holland, with an output last year of over 113,000 tons of seagoing craft in addition to 70,000 tons of shipping intended for inland navigation; Norway, which last year launched nearly 50,000 tons, and Denmark with an output of 45,000 tons.



BUILT FOR THE CANADIAN GOVERNMENT IN ENGLAND
The "Prince Edward Island," now plying across the Straits of Northumberland

Our Present Industrial Equipment.

We have to-day on the Atlantic seaboard two iron and steel corporations with mills equipped for rolling channels and ordinary sections required for the construction of steel steamers up to say eight or ten thousand tons dead weight capacity. One of these corporations, the Dominion Iron and Steel Company, in addition to having mills well calculated for rolling these sections, has a modern plate mill capable of rolling sheets of the largest dimensions required in the construction of steam vessels of larger sizes than we have referred to; while the pioneer steel corporation of Canada, the Nova Scotia Company, at New Glasgow, in addition to rolling angles and moderate sized channels, has for many years operated a plant for rolling sheets up to fifty inches in width. Their forging plant, especially installed for marine work, is equipped with perhaps the finest and most effective hydraulic fluid compression and forging equipment on the Continent, and during the past year has actually shipped over three thousand tons of heavy marine forgings to the Clyde district, practically replacing to that extent forgings that were formerly supplied by Germany.

On the lake front, the Steel Company of Canada, at Hamilton, and the Algoma Iron and Steel Company at Sault Ste Marie, are in a position to-day to supply a large proportion of the material necessary for steel shipbuilding, and there is little doubt that up-to-date mills for the production of the larger sections and plates required would soon be installed both in Nova Scotia and Ontario, providing there was a reasonable assurance of a continuous demand for such products.

Canada's Opportunity.

We have in the Maritime Provinces a larger body of men who by inheritance, tradition and daily experience are especially fitted for manning such a merchant marine as Canada should possess. In years past under totally different conditions prior to the advent of the iron and steel steamer, our provincial ships sailed the Seven Seas and Canada occupied a foremost place among the maritime nations of the world. That position the Dominion can regain in a generation, provided Canadians now take up and deal with the matter in the broad, generous, energetic way with which they have dealt with the other large problems which have confronted this country since Confederation. The need for a merchant fleet exists. We can make or find the materials. We have the mariners to man the fleet.

In this matter Canadian manufacturers are vitally interested both as manufacturers and as freighters. Surely it is not too much to expect that they should now take the subject up and call attention to its national importance.

Canada must, can and will build a navy of mercantile marine if the people of this country tell the Government that conditions must be brought to bear which will enable us to do it.

THE AUSTRALIAN METAL INDUSTRY.

In view of the agitation, which has been repeatedly worked up in Canada since the outbreak of war, to have a closer governmental control of the nickel industry, the following statements credited to Hon. W. M. Hughes, prime minister of Australia, and explaining the steps taken by the Commonwealth to safeguard its metal industries, are of interest:—

Before the war Germany had secured almost a monopoly of the products of Australian mines, but all contracts were soon declared null and void, arrangements were made so that the metals might be treated either in Australia or the United Kingdom. Metal exchanges have been established under the control of the Australian Government, and the sale or purchase of practically every ton of metals or ores must be registered. All sorts of precautions are taken, so that the enemy shall not secure either representation on the metal exchanges or any of the products of the industry. The authorities have even gone so far as to insist that all enemy alien shareholders in companies incorporated in Australia shall surrender their shares to a Public Trustee appointed for the purpose. That Trustee will see that such shares and all dividends, etc., accruing are saved up till the end of the war or for twelve months after it has ended. Mr. Hughes' prompt and definite action concerning the mining industry was something of a lesson to the home authorities.

"When the war broke out," he said recently, "Mertons was the trusted broker of the British Government; the selling broker of the whole of the Australian lead was Aaron Hirsch; for copper, Beer Sondheimer, and for zinc, Mertons and Metallgessellschaft. Whatever metals Britain wanted she had to purchase from or through these German firms. Munitions, the life's blood of modern war, flowed into British hands through these polluted channels. After fourteen months of war we are able so say, at any rate, that it does so no longer. Markets have been formed for Australian products direct with Great Britain and the Allies. The policy of the Government is to encourage the development of the metal industry so that all ores produced in the Commonwealth may be treated therein, and, above all, the policy of the Government is that the industry must not fall into German hands after the war. We are going to cut every trace of German cancer out. The Australian Metal Exchange is the means through which these objects can be carried out."

SHIPBUILDING PLANT FOR BRITISH COLUMBIA.

Port Moody ratepayers recently passed a by-law providing for the guaranteeing of a shipbuilding company's bonds up to $200,000 together with exemption from taxation on improvements for twenty-five years and water for all purposes at not more than five cents per 100 cubic feet for the same period.

The company has acquired a property situated between Kyle and Queen Streets, Port Moody, with a water frontage of 400 feet in length, by 1,100 feet deep, and its active management will be in the hands of Captain H. Mowatt, late superintendent at Liverpool of the C.P.R. Marine Service.

Foundations will be provided for three launching slips, built so as to afford facilities for the erection of two ships on each simultaneously. On these ways the company will, at first, build vessels of approximately 2,000 tons, each with accommodation for 1,500,000 feet of lumber in their cargo space. The slips will be installed in such a manner that steel vessels up to 10,000 tons can also be constructed. The plant will also have a complete machine shop, foundry and woodworking equipment, one of the company's officials is reported as stating that they have sufficient business in sight for two years ahead.

CHARTERED GOVERNMENT STEAMER.

A St. John report states that the sugar and molasses interests have been quite seriously affected by the transportation conditions arising from the war. To meet this condition, the government steamer *Durley Chine*, has been chartered to run to the West Indies and to bring back a cargo of sugar. The molasses importers are making the very reasonable request that the sugar space thus released on the regular R.M.S.P. liners be employed in the carriage of molasses.

THE BOOM IN THE CANADIAN FLAX INDUSTRY

By JAMES A. McCRACKEN
Secretary, the Canadian Flax Growers' Association

(From the Agricultural War Book, 1916)

A CALL for flax straw in baled form has come from Belfast and Dundee flax-spinning companies. They have actually tried to buy great quantities of green flax straw in Ontario with the intention of transporting it acress the Atlantic and extracting the fibre. For every ten tons of such straw they would get only about one ton of usable fibre. The cost of transportation alone would amount to several times the normal price of the fibre.

We do not export wheat in the sheaf, why should we export flax straw in bulk?

The flax stringency, which arises chiefly from the fact that Russia's flax production is reduced by 40 per cent. and Belgium flax cannot be had, is aggravated by the high rates of transport. The second factor is little less potent than the first in creating a demand for more flax.

As a result of the shortage Irish flaxes have risen in price to between $700 and $850 a ton, and Canadian fibre to about $450 a ton—these figures being double those obtaining in pre-war times. Though all grades of flax are eagerly picked up, the most crying need is for the finer grades, largely because the ability to substitute jute and hemp for flax decreases as the spinning material advances in quality and purpose.

Need of More Exports.

Though the Empire in this hour can do without flax better than without bread, we face the fact that there are several nations, (*e.g.*, Argentina and the United States) outside the zone of warfare which are ready and able to increase the production of wheat, while there is none, except Canada and Japan (both in a limited degree), ready to increase the supply of flax fibre for spinning. Neither Canada nor Japan, it may be stated, ordinarily exports enough flax fibre to be placed in international trade statistics.

Canada can do a good deal more in this direction than she is doing. The urgency grows stronger when we appreciate that every acre of flax devoted to fibre purposes means from $75 to $100 in exports. Whatever flax we export goes mainly to the New England mills and to Ireland, thereby assisting in restoring our trade balance and relieving, directly or indirectly, the needs of the hour.

Cultural Practices in Canada.

Wherever the usual Canadian practice of farming is followed, it is customary for the flax grower to work in co-operation with a flax mill. About 25 of these mills (several reopened) are now bargaining for land rentals in S.-W. Ontario. It is usual for the millman to rent fields from the farmers in the district at from $10 to $14 an acre. The farmer tills the land, and in some cases hauls in the crop. The farmer undertakes the tasks of sowing, weeding and harvesting. Though the custom hitherto has been to restrict rentals to distances within team-haul of the mill, there is a growing tendency for mill men to buy flax or rent land at points upwards of fifty miles, and transport the flax in baled form by rail to the central mill. For such straw delivered at a siding, from $13 to $15 a ton, seed on, is paid.

Over 30,000,000 bushels of flax seed are consumed in North American oil mills annually in the manufacture of linseed oil, oil cake, etc. The demand is increasing. During 1915, 13,000,000 bushels of seed were imported from Argentina, and the price in Winnipeg went to two dollars a bushel.

Statistics.

Fibre acreage in Ontario—1913—2,500 acres.
1914—1,400 acres.
1915—4,000 acres.
1916—5,500 acres (estimated).

Fibre production in Russia—1913—600,000 tons.
1914—324,000 tons.
1915—487,000 tons.

Average annual export of fibre from Russia (1911-1913)—288,133 tons.

Fibre available for export from Russia (1915)—140,000 tons.

In a recent number of the *Scientific American*, Mr. McCracken gives some interesting particulars of experimental work carried on in the flax mills at Forest, Ont. The experiments have to do with the water-retting of flax, a method common in Ireland, but as yet new in America. In conjunction with the foregoing extracts from the Argicultural War Book, the following paragraphs about the success of the expe riments at Forest will be read with interest.

Retting.

The importance of the system of retting is fairly indicated by the average price of Irish flax compared to the average price of Canadian flax. This season the former brings between 36 and 43 cents per lb., while the latter—except for one small lot, water-retted—brings between 16 and 25 cents per lb. The Irish and Canadian crops, as grown, differ little in quality. But Irish flax is water-retted, while Canadian flax, except for one departure to date, is dew-retted.

The chief advantage of water-retted over dew-retted fibre is one of uniformity, which is obviously important in fine spinning. The most satisfactory experiments in water-retting yet undertaken in America are those connected with the exception cited above, in the form of experiments conducted at Forest, Ont. The fibre which has been produced in this manner has brought 45 cents per lb. on the New England market. This flax, by the way, did not receive the complete advantages of water-retting, but only those of mixed retting, which means treating the flax half way in tanks and the balance of the process on the grass, as in dew-retting. The operator, Howard Fraleigh, of Forest, Ont., was satisfied to take one step at a time so as not to overreach himself, as some flax men have previously done.

The two tanks already used at Forest are of concrete, each 25 feet long, 15 feet wide, and 4 feet deep. They are placed end to end. The water is supplied by a gasoline pump, from a well 108 feet deep, whose water tests 5.25 degrees Clark for softness and is quite muddy.* It is only four miles in a direct line from Lake Huron, from which fact some have supposed that there is a subterranean connection with the lake. This opinion is plausible in view of the shale formation of the lake bed opposite this point. Discharge from the tanks is through removable stoppers at the bottom to a public ditch.

The Highest-Priced Fibre.

The best fibre yet produced at this plant—the 45-cent lot—was secured from flax put direct into the tanks after it was pulled; that is to say, the flax was placed in the tanks without

* Note: Rain water, which is the ideal liquid in which to ret flax, tests 3 deg. Clark; upland surface water 154 deg., and ordinary spring water 185 deg.

threshing or curing in the shock. This is the method long famous in Ireland, but it is gradually being abandoned for the method by which the seed is saved. In Belgium and Holland still more valuable fibre is obtained without sacrificing the seed. The crop is carefully cured and frequently held over from one year to another in order that there may be material for steady retting from early spring until late fall. Fraleigh intends hereafter to hold a portion of his straw over until the following year, and to start retting as soon as fine weather begins. By this means not only will the straw be improved, but he can keep his men steadily engaged and can reduce his equipment for a given crop to the minimum.

Each of the tanks mentioned above holds about two tons of threshed straw. The sheaves are placed tightly in a leaning position in the tanks until all the space is occupied. The mass is weighted with planks and stone so as to overcome not only the natural buoyancy of the straw, but also the added tendency to rise after decomposition sets in. The water is usually turned on at dusk, as it takes all night for the tanks to fill.

In ordinary July and August weather four or five days is usually sufficient to effect the dissolution of the adhering gums, so that the fibre can be extracted. Extreme care and diligence are needed to determine the exact stage at which the operation is completed. That is why Fraleigh has cautiously stopped half way—at mixed retting. The 45-cent fibre, however, was obtained from straw that had practically completed retting in the tank.

At a point about halfway toward the completion of the retting operation the water is drained off and the flax removed. It is carefully transported to an adjoining meadow and spread evenly in rows, as for dew-retting. The time required on the grass varies according to the conditions of the flax and the state of the weather.

Not only does the water process enhance the value of the fibre, but, as a sustitute for dew-retting, it often means the actual saving of great quantities of flax. Let us see how dew-retting involves such losses:

In the first place, because of the shortness of the season following threshing-time, great areas of straw are frequently spread before any is ready to lift. A prolonged wet spell occurring at such a point causes over-retting of a portion of this straw. In a word, the operator is at the mercy of the weather.

The tentative operations at water-retting at the Forest plant have been so encouraging that several more tanks are to be constructed this spring. At present there is no covering for the tanks. It is proposed to remedy this deficiency by the erection of a roofed structure with extended sides. This will enable men to work in all sorts of summer weather. All the work connected with handling the straw has so far been accomplished by hand. Consequently, there remains to be worked out, once the success of the process warrants it, some system of power-driven travelling cranes and carriers to effect the cheap transfer of the straw from waggon to tank, and vice versa. This is a minor point, quite outside the retting process proper, however.

NOT THE ONLY ASPHALT PLANT.

Attention is directed by James Hart, secretary of the Manufacturers' Association of British Columbia, to the statement appearing on page 1286 of the April number of INDUSTRIAL CANADA, to the effect that the refinery to be built in Montreal by the Imperial Oil Company will be the only asphalt refinery in Canada. Mr. Hart states that the British Columbia Refining Company, Limited, of Vancouver, have been refining asphalt for the last three or four years.

BRITAIN INCREASES YARN EXPORTS.

A comparison of Great Britain's exports of cotton cloth from 1913, 1914 and 1915 shows plainly the commercial value of a command of the sea in time of war. In 1913 the exports of cotton cloth amounted to 7,075,252,000 yards, of which 507,834,100 yards went to countries with which Great Britain is now at war. This trade is lost during the war because trade with the enemy is prohibited under heavy penalties. The remainder, 6,567,417,900 yards to what are now neutrals or allies is to be compared with the exports, 4,748,904,600 yards to the same countries in 1915, showing a loss of barely 28 per cent. of the British cotton cloth exports as a result of this world war.

The British exports of cotton yarn for these two years are even more impressive. The yarn exports for 1913 amounted to 210,099,000 pounds. Deducting the exports to the enemy countries, 69,004,000 pounds, there remains 141,095,000 pounds to other countries. The exports of yarn to the same countries in 1915 amounted to 188,178,700 pounds, showing a gain of 33 per cent. as compared with the last years of peace.

Accidents should all remind us
We could make our lives secure,
If in working, we would practice
To be safe, we must be sure.

EFFICIENT VISION.

Among the many circumstances in modern civilization tending to impair human vision is improper illumination, either natural or artificial, says a writer in the *Scientific American*. Too intense light is as bad, perhaps worse than, poor lighting. Eyes are not merely optical adjuncts; they are integral parts of the body, really expanded portions of the brain. They mutually affect the functioning of most other organs; inefficient eyes cause many chronic headaches, much depression and bodily fatigue, most indigestions, many (some believe, practically all) of the abberations of genius and of the alleged *demi-fous*, the half-witted.

Any organ exercised well within its limits tends to increase in power and facility; if persistently overworked it becomes progressively unable for any work at all. One habitually using his eyes in strong light decomposes his "visual purple" faster than it can be regenerated. Even normal eyes are ruined by overuse, especially in lowered general health; and as most eyes are abnormal, or at least not perfect as visual machinery, many people have to cope not only with bad environment and lowered health, but also with inherent optical defects. Doctor Ellice M. Alger, whose knowledge of the eye is peculiarly full and exact, considers that because of the many newly invented methods of commercial lighting, by gas and by electricity, the composition of light as well as its intensity, have come to require serious consideration. In the days, and nights, of oil and candle light, the question was simply one of quantity, the quality being generally soft and benignant; but modern lighting, whether gas or electric, is often so intense as to be injurious; these latter means of illumination contain many more of the violet and ultra violet rays of the spectrum than our fathers were accustomed to. Such rays are useful in the treatment of disease by light and in radiography; but they are certainly amiss for illuminating the printed page or the object on which the artisan must work. Lights that can tan and sunburn the skin, and perhaps induce baldness, are no doubt responsible for much of the present-day visual weakness. The effect of such illumination on the deeper optical structures is certainly pernicious. It is very likely much cataract comes from this cause; certain it is that stokers, glass-blowers and other workers in intense light and heat, are enormously prone to this grievous eye disease.

Illumination made up of red and yellow rays of the spectrum is the best for visual purposes. The problem of securing a light which shall allow a maximum of efficiency, comfort and convenience is one more within the province of the illuminating engineer than of the physician to solve. The solution was not only a humane procedure, but one which should be also very profitable to inventor, to employer, to employee, and to all who read—that is, to everybody.

TARIFF

By J. R. K. BRISTOL

To Manufacturers Not Engaged in Export Business, But Who May Contemplate Such Developments:

Are you aware that you have the privilege of practically duty free materials for manufacturing for export? Full information on this matter can be obtained from the Customs Department, Ottawa; or from the Manager, The Tariff Department, Canadian Manufacturers Association, Toronto.

Customs Rulings.

Tariff Item No. 577—Ruled to include usual silk yarn required in the manufacture of silk labels.

Curled Hair, per sample—Ruled to be dutiable under Item No. 644, at 12½ per cent. British preferential, and 20 per cent. general tariff, and subject also to the war tariff.

Felloes of hickory or oak, planed on one or more sides, and bent to shape—Ruled dutiable under tariff item No. 506. By the provisions of tariff item No. 506 the general tariff rate is 25 per cent. The addition of the war tariff makes the rate equal to 32½ per cent. ad valorem.

Staves per sample, not being oak or poplar—Ruled free under item No. 503.

Iron tanks for metallurgical processes (per blue prints)—Ruled to be dutiable under item No. 454. Under this item the general tariff rate plus the war tariff equals 37½ per cent. ad valorem.

Mixed dyed wool waste per samples—Ruled free of regular duty under item No. 681.

Flat strip steel, cold rolled, per sample—Ruled to be dutiable under item No. 384, at the general tariff rate of 5 per cent. plus the war tariff of 7½ per cent.

Board of Customs Decisions.

Nujol, per sample, being refined mineral oil for medicinal purposes—Declared to be dutiable under tariff item No. 274 at 25 per cent. general tariff plus the war tariff.

Straps of leather, per samples, without buckles, adapted to be made into ladies' belts—Declared to be dutiable under tariff item No. 612, at 30 per cent. general tariff plus the war tariff.

Puttees, per sample, manufactured from knitted material—Declared to be dutiable under tariff item No. 567, at 35 per cent. plus the war tariff of 7½ per cent.

Inland Revenue.

Malt for the manufacture of pharmaceutical malt extract—Ruled free of excise, subject to approved license of the factory.

ORDERS RESPECTING FOOT AND MOUTH DISEASE, IMPORTS OF ANIMALS, ETC.

Embargo Against Illinois Continued for Three Months.

Under the provisions of "The Animal Contagious Diseases Act," for the period of three months, from May 3, 1916, the following regulations will govern the importation into Canada of animals or their products, or of hay, straw, fodder or manure from the State of Illinois:

(1) Cattle, sheep, goats and swine are prohibited.

(2) Horses may be admitted upon the receipt of a special permit from the Veterinary Director-General. Owners should make application for a permit before shipping.

(3) Dogs, other than those used for herding cattle or sheep, may be admitted; also cats, pet birds, live pigeons and wild or menagerie animals, except deer.

(4) Live poultry is prohibited, except birds for exhibition or pure bred poultry for breeding.

(5) Cured and cooked meats, butter and eggs may be imported.

(6) Dressed meats, fresh or cured, with the exception of heads, tongues and feet, will be admitted when accompanied by the export certificate of the Bureau of Animal Industry and consigned to an establishment under Federal inspection.

(7) Hides must be accompanied by a certificate of disinfection signed by an officer of the Bureau of Animal Industry. Less than carloads will not be admitted.

(8) Pickled pelts of sheep and goats, also skins of wild fur-bearing animals, tanned or untanned, may be admitted.

(9) Tanned sheep and goat skins with wool attached must be accompanied by certificate of disinfection signed by an officer of the Bureau of Animal Industry.

(10) Wool may be admitted under the following conditions:

(*a*) When accompanied by a certificate of disinfection signed by an officer of the Bureau of Animal Industry.

(*b*) Pulled wool, scoured and dried at a temperature of not less than 160 degrees F. and accompanied by affidavit of shipper to that effect.

(*c*) Foreign wool, ex-warehouse in Illinois, in original bales, and accompanied by affidavit of warehouseman that it has not been in contact with other wools.

(11) Hair and feathers may be admitted when accompanied by certificate of disinfection by an officer of the Bureau of Animal Industry.

(12) Hay, straw, other fodders and manure are prohibited.

(13) Fragile merchandise packed in hay or straw must be accompanied by a certificate, signed by a Bureau of Animal Industry officer, that the packing material has been disinfected. In default of this, permission may be granted by the Veterinary Director-General for the delivery of the goods on the undertaking of the importer to burn the packing material as soon as received.

(14) Sterilized manure may be permitted transit through Canada from points in Illinois to destinations in the United States, provided it is contained in bags, boxes or barrels, and shipped in sealed box cars, and accompanied by a certificate of sterilization signed by an officer of the Bureau of Animal Industry.

(15) Transit through Canada of cattle, sheep, goats and and swine from the Union Stock Yards, Chicago, to United States points is permitted under the following conditions:

(*a*) Shipments must be accompanied by a certificate of health signed by an officer of the Bureau of Animal Industry.

(*b*) Cars must be clean and provided with 10-inch footboards to prevent escape of manure in transit.

(c) Cars must be under seal while in transit through Canada.

(d) Cattle, sheep, goats and swine must not be unloaded in Canada unless special permission is granted by the Veterinary Director-General for use of stock yards reserved for this traffic only.

(16) Importation of live animals and their products, also hay, straw, and other fodders, from any other State than the State of Illinois is permitted under the ordinary regulations of the Department of Agriculture, but the shipper may be required, if deemed necessary, to produce evidence that the shipment did not originate in the State of Illinois.

Dated at Ottawa, this third day of May, 1916.

GEO. F. O'HALLORAN,
Deputy Minister of Agriculture.

EXPORTS TO SWITZERLAND.

Should Not be Consigned Via Havre.

With reference to the notice on page 744 of the *Board of Trade Journal* of 9th March relative to the congestion at the port of Havre, it is notified that, according to information received from H. M. Embassy in Paris, under date 2nd April, the French authorities are unable to arrange to forward from Havre British goods destined for Switzerland. The representative in Paris of the *Société Suisse de Surveillance Economique* calls attention to the fact that the shipment of such goods to Havre results in considerable loss to Swiss importers, inasmuch as the goods have to be reshipped from Havre to another French port, where they can be entrained for Switzerland.—*Board of Trade Journal*, London, Eng., April 20, 1916.

British Prohibited Imports.

The following is a consolidated and alphabetically arranged list of articles, the importation of which into Great Britain is prohibited:

(d) Baskets and Basketware, except baskets and basketware of bamboo.
(a) Cardboard (including strawboard, pasteboard, millboard and wood pulp) and manufactures thereof.
(d) Cement.
(d) Chinaware, earthenware and pottery (not including cloisonne wares).
(a) Cotton rags.
(d) Cotton yarn.
(d) Cotton piece goods.
(d) Cotton manufactures of all kinds, except hosiery and lace.
(d) Cutlery.
(a) Esparto grass.
(d) Fatty acids.
(b) Fruits (canned, bottled, dried and preserved, except currants).
(d) Furniture, manufactured by joinery.
(a) Furniture woods.
(d) Hardware.
(a) Hardwoods and veneers.
(d) Hollow-ware.
(a) Linen rags.
(a) Millboard and manufactures thereof.
(c) Motor cars, chassis, motor cycles, parts and accessories, other than tires, with the exception of motor cars, chassis, accessories and parts at present exempted from import duty under section 13 (4) of Finance (No. 2) Act, 1915.
(c) Musical instruments, including gramophones, pianolas and other similar instruments and accessories, component parts, and records thereof).
(d) Oilcloth.
(a) Paper and manufactures thereof.
(a) Pasteboard and manufactures thereof.
(a) Periodical publications exceeding 16 pages in length, imported otherwise than in single copies through the post.
(a) Slates.
(d) Soap.
(c) Spirits and strong waters of all kinds, except brandy and rum.
(a) Stones.
(a) Strawboard and manufactures thereof.
(d) Timber of beech, birch, elm and oak.
(a) Tobacco (unmanufactured and manufactured, including cigars and cigarettes).
(a) Veneers and hardwoods.
(d) Wood manufactures, except lacquered wares.
(a) Wood pulp.
(a) Wood pulp board and manufactures thereof. Woollen and worsted manufactures of all kinds, except

(a) The items marked (a) are prohibited on and after March 1, 1916.

These regulations will not apply to any goods of the description specified which are imported under license, given by or on behalf of the Board of Trade and subject to the provisions and conditions of such license.

Moreover, this prohibition is subject to the grant of licenses by a commission announced on February 17, 1916, and it is stated that it has never been the intention of the Government to stop altogether the importation of the goods mentioned in the proclamation, but only that power to give or withhold licenses should be made use of so as to secure substantial reduction in importations for the present at thirty-three and one-third per cent. The commission is expected to attach to licenses issued by them such conditions as they think desirable with the object of securing as far as possible that consumers of paper shall receive two-thirds of their supplies in the standard year. The period time which is to be taken as standard year is left to commission. The reduction in importation is as above for the present thirty-three and one-third per cent., but it is possible larger reduction may prove possible without undue hardship to interests affected.

Paper Imports—With reference to the proclamation issued prohibiting the importation amongst other articles of paper, wood pulp and other paper-making materials (including esparto grass, linen and cotton rags), it is announced that His Majesty has been pleased to issue a commission to grant licenses for the importation of such quantity or such proportion of these goods as the Board of Trade may from time to time direct, and to arrange for the importation of this quantity or proportion and for the distribution of the imports among paper-makers and paper-users on such terms as may appear to the commission to be equitable.

Regulations as to Licenses—The regulations as to licenses for the importation of paper and paper-making materials into Great Britain. which were recently issued by the Royal Commission on Paper, were printed in Weekly Bulletin No. 635, page 678.

(b) Items marked (b) are prohibited from March 13, 1916. This prohibition does not apply to such fruits which are the

products of Dominions and colonies nor to fruits imported under licenses given by the Board of Trade.

(c) Items marked (c) are prohibited from March 27th, 1916. These prohibitions will be subject to issue of licenses, but such licenses will not in general be issued except where evidence is forthcoming that the goods were either (a) actually en route for the United Kingdom on March 21, or (b) paid for on March 21st.

(d) Items marked (d) are prohibited from March 30th, 1916. Licenses will in general be granted only in respect of goods on the way to the United Kingdom or goods actually purchased on March 30, 1916.

Information has come to hand to the effect that all correspondence with regard to these prohibitions, including application for licenses, should be addressed to The Comptroller, Department of Import Restrictions, 64 Victoria Street, Westminster, S.W.

Weekly Bulletin No. 638, April 17, 1916.

Canadian Confectionery in South Africa.

The United States Consul, Edward A. Dow, St. Stephen, N.B., in Commerce Reports No. 93, April 20, 1916, gives an example in the following words of how one of Canada's Trade Commissioners in South Africa is producing results in the furtherance of our export trade, viz.:

Candy Factory Gets Orders from South Africa.

"A chocolate candy factory in St. Stephen, one of the largest in Canada, is operating all departments three nights a week. This is customary only at Christmas time. Despite the high price of sugar, this factory reports a larger business in 1916 thus far than for any similar period. The opinion is advanced that sales of candy will continue to increase by reason of expected prohibitory legislation in many of the Provinces of Canada. This factory has begun to seek export trade, and a representative has secured good results in first orders from South Africa, where the way has been prepared for Canadian exporters by a Trade Commissioner."

The South African Customs tariff (general) on confectionery is twopence halfpenny sterling per pound, or 25 per cent. ad valorem, whichever rate shall be the greater. On Canadian products the foregoing rates are reduced to the extent of the preferential rebate of one-quarter penny per pound, or 3 per cent. ad valorem, as the case may be.

Australian Government's Preference to Empire Goods.

For some years past the Commonwealth and State Governments, in the consideration of tenders received for the supply of necessary requirements, have given a preference to goods manufactured in Australia and in the United Kingdom.

There was no special departmental ruling as to the amount of the preference, as each tender was considered on its own merits. In practice local and British manufacturers could depend upon a preference of at least 10 per cent. over the prices submitted by foreign countries as well as those received from other portions of the Empire.

Recently there has been a disposition in both the Commonwealth and State purchasing departments to extend the preference to goods or materials of Empire manufacture.

The Government of New South Wales has decided that in future a 10 per cent. preference shall be extended to goods or materials of local, British or Empire manufacture as against those of other countries. It was also decided that such margin of preference shall be inclusive of any preferential Customs duty that may obtain in the case of the particular materials so affected. Government departments and corporate bodies operating under the ægis of the New South Wales Government have been requested to give effect to the policy indicated.

Although the condition qualifying the application of this preference, by stipulating that it is to be inclusive of any preferential Customs duty already existing, limits the value of the concession made so far as United Kingdom manufacturers are concerned, it should be of distinct value to manufacturers in Canada.—J. H. Ross, Can. Trade Commissioner to Australia, in *Trade and Commerce Weekly Bulletin, No.* 640.

France.

Re treaty rates on importations of Canadian products via United States:

In reference to the preferential rates of duty granted upon certain goods of Canadian origin when imported into France, the French Customs authorities have recently declared that the right to these rates is forfeited when the goods are transhipped in the ports of a country not entitled to such favorable treatment. The French Customs authorities may make exceptions to this rule, however, upon special application, to be made in the case of each shipment, but the importer is required to submit a certificate from the French Consul at the United States port, stating that the goods have been merely transhipped and have not been subjected to any alteration in the United States. The usual certificates of origin are also required.—*Commerce Reports*, No. 90, April 17, 1916.

New Industries in Italy Exempted from Certain Taxes.

With reference to the notice on page 805 of the *Board of Trade Journal* of 16th March, relative to an Italian Royal decree granting exemption from Customs and octroi duties of machinery and building materials for new industries in Italy, it is to be noted that Article 2 of the Decree, a translation of which has been received by the Board of Trade from H. M. Embassy at Rome, provides that during the first five years of their effective working, the receipts of the new industrial establishments set up to manufacture goods not previously produced in Italy, or devoted to new industrial undertakings, are not to be subject to income tax. During the same period the manufactures wholly turned out by such industrial plants, or on which they are permanently engaged, will also be exempt from any tax or supertax.—*Board of Trade Journal*, London, Eng., March 30, 1916.

Advantages of a Preferential Tariff.

The United States enjoys a tariff preference over Canadian products in the markets of Cuba. How the preference enables the United States to hold the Cuban markets against Canadian competition is pointed out by United States Consul Edward A. Dow, St. Stephen, in a report dated April 13, 1916, as follows:

"Cuban transactions with Canada are facilitated by the location of branches of the Bank of Nova Scotia and the Royal Bank of Canada, the latter having 22 branches in Cuba. Americans and Canadians are attempting to compete with the Netherlands in the cheese trade, the Dutch Gouda cheese being in greatest demand.

"Despite these Canadian efforts in Cuba, the preferential tariff with the United States and the friendly relations with

that country will prevent any material change in the great mass of trade now going to the United States.

"Not only has the Dominion of Canada a commercial service abroad, maintained at its own expense, but it receives the co-operation of Great Britain's general commercial agencies. In turn, the Dominion has begun to assist the efforts of the various Provinces in promoting foreign trade. The Provincial authorities of New Brunswick report to the Legislature now in session that local shippers urge the retention of the Provincial representative in Cuba, where this officer is maintained at the joint expense of the Dominion and this Province. It is understood that special efforts are being made to create in Cuba a demand for Canadian lumber, fish, potatoes, and even machinery. Shippers are asked to give special attention to packing and preparation of exports, as demanded by foreign buyers."

RECORD OF ENEMY DEBTS.

Canadian manufacturers, who have been interested in ascertaining the steps to be taken in recording debts owing them by persons or firms in Germany or Austria, will note with satisfaction the terms of an order-in-council, passed on May 2, which deals with the whole question of money owing either by Germans to Canadians or by Canadians to Germans. Section 35 of the order refers specially to the record of debts due by enemies. It is as follows:—

(1) *The Custodian shall,* in addition to his other duties as defined by these orders and regulations, *keep a record of:—*

(a) *Debts (including bank balances) due to persons resident or being within Canada, from persons residing or being in enemy countries.*

(b) Other property in enemy countries (including securities) belonging to persons residing or being in Canada.

(2) Any person desiring to record such claims or property may obtain the necessary forms for that purpose from the Custodian; but the action of the Custodian will be confined to entering upon the record claims of which particulars are supplied to him, and it shall in no way commit the Government of Canada either to responsibility for the correctness of the claim entered or to taking any action on the conclusion of hostilities or otherwise for the recovery of the debt or property in question.

(3) The Custodian shall record claims against enemy Governments in respect of public *securities* of these Governments, held by the claimants, but not any other claims against enemy Governments, as distinct from claims against enemy subjects.

The "Custodian" referred to is the Minister of Finance and Receiver-General.

FOREIGN TRADE OF CANADA.

(Comparison 1914, 1915, 1916.)

IMPORTATIONS.

	Month of March.			Twelve Months Ending March.		
	1914.	1915.	1916.	1914.	1915.	1916.
Dutiable goods	$34,944,885	$23,751,511	$34,780,853	$410,130,474	$279,717,254	$289,332,729
Free goods	18,166,219	16,659,873	27,253,752	208,198,400	175,654,117	218,450,632
Coin and bullion	1,409,125	446,795	531,383	15,235,305	131,992,992	34,260,202
Duty collected	9,337,771	8,557,853	12,171,978	107,144,645	79,183,489	103,929,426

EXPORTATIONS.

Exports for March.

	1914		1915		1916	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign
Products of Mine	$6,569,364	$10,859	$5,997,010	$5,636	$8,004,843	$54,838
Products of Fisheries	1,470,274	21,283	2,065,564	8,674	2,054,493	23,255
Products of Forests	2,694,986	1,505	3,440,941	5,344	3,247,691	1,466
Animals and their Produce	3,202,060	112,233	5,476,249	22,424	8,626,681	309,025
Agriculture	6,512,546	39,794	12,438,145	693,116	17,852,426	39,185
Manufactures	6,239,290	722,126	15,600,790	1,838,866	47,013,766	595,149
Miscellaneous	12,471	153,701	100,223	196,356	1,614,338	142,992
	$26,700,991	$1,061,503	$45,118,922	$2,770,416	$88,414,238	$1,165,910
Coin and bullion	35	10,604,295		21,793,481		192,274
Total	$26,701,026	$11,665,798	$45,118,922	$24,563,897	$88,414,238	$1,358,184

Twelve Months Ending March.

	1914		1915		1916	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
Products of Mine	$59,039,054	$194,852	$51,740,989	$325,548	$66,589,861	$7,329,537
Products of Fisheries	20,623,560	111,289	19,687,068	131,669	22,377,977	213,307
Products of Forests	42,792,137	593,950	42,650,683	486,098	51,271,400	426,884
Animals and their Produce	53,349,119	1,262,953	74,390,743	2,565,259	102,882,276	2,936,914
Agriculture	198,220,029	8,595,689	134,746,050	35,604,014	249,661,194	17,213,996
Manufactures	57,443,452	10,158,786	85,539,501	9,529,024	242,034,998	8,017,225
Miscellaneous	121,088	2,931,266	663,802	3,382,061	6,792,932	1,551,569
	$431,588,439	$23,848,785	$409,418,836	$52,023,673	$741,610,638	$37,689,432
Coin and bullion	1,219	23,559,485	667	29,365,701	315	103,572,117
Total	$431,589,658	$47,408,270	$409,419,503	$81,389,347	$741,610,953	$141,261,549

INSVRANCE

A Mutual Fire Association for Y. M. C. A. Buildings.

A MUTUAL fire association is being organized to handle the risk on the seven hundred and fifty-nine Y. M. C. A. buildings in the United States and Canada. The total amount at risk is $50,000,000, and it is held that the wide distribution and the character of the hazards make the mutual plan possible.

Will Investigate Fire Causes.

Kenora, Ont., has taken a firm stand in the matter of investigating the causes of fires, and at a recent meeting of the town council the following resolution was adopted:

"Whereas several fires of unknown origin have recently occurred within the town of Kenora resulting in the destruction of considerable property; and whereas it appears to be in the interests of the citizens generally that such fires be investigated; therefore, be it resolved that this council is of the opinion that fire inquests should be held with respect to all fires of unknown origin."

State Insurance Fails in Wisconsin.

On March 16th last the State Fire Insurance Fund of Wisconsin had cash in hand amounting to $203,448 against which were liabilities of $31,178 for unearned premium reserve and $78,138 for borrowed money, leaving an apparent surplus. Since that date the Normal School at Oshkosh has burned, involving a loss to the fund of $181,000, thus making a deficit of $86,869. In this connection the Governor of the State remarks: "This deficit represents the amount that the taxpayers of the State must pay for the privilege of experimenting with an unsound policy of state insurance." With this deficit the State Fund is still carrying fire insurance amounting to over twenty-one million dollars and tornado insurance of nearly an equal amount.

Enquiry Into Canada's Fire Waste.

A comprehensive enquiry into the subject of fire waste in Canada is now being carried out on behalf of the Commission of Conservation. The Commission will present an exhaustive report, including a complete record of causes and extent of fire losses in the Dominion, a survey of the means at present employed in fire control and a resume of all provincial and municipal fire laws. Upon the facts thus presented the Commission hopes to establish a good case for a fire marshal law in each province; a statutory, minimum building code for the Dominion; and compulsory standards for public fire protection. The information is being gathered from municipalities upon carefully prepared blanks on which the Mayor or Reeve is expected to report certain items and the Fire Chief others. In addition to enquiries covering the nature of building construction, fire department equipment, etc., such questions are asked as the following: Are shingle roofs permitted? Is there fire prevention inspection? Are there lumber yards in the business section? What is the diameter and thread of your hose coupling? Have you ever considered adopting the standard coupling?

Workmen's Compensation in British Columbia.

A delegation of insurance men waited on the Government of British Columbia some time ago with a number of arguments against the plan of State insurance which, it is understood, will be included in the proposed Workmen's Compensation Act for that province. The insurance men offered numerous concessions, including a provision that agents would retain only 5 per cent. of the premium as commission, paying the balance of 7½ per cent. to the Government for the administration of the Act. They argued that private insurance could be carried on as cheaply as insurance by the State, and requested a year's trial of the private insurance system under the new Act. On the other hand, it was stated at the conference that investigations had found only one large employer of labor who favored private insurance over the State system. It was also contended that the employees would receive larger liability payments for the same expenditure on the part of the employers. It is probable that the system of State insurance will be operated in connection with the new act.

Companies Withdraw from South Carolina.

The Anti-Compact Bill relative to fire insurance has been signed by the Governor of South Carolina. The law became operative March 22. Practically all the fire insurance companies doing business in the State will eventually suspend operations, it is said, because of this drastic law. The companies hold that it is impossible for them to comply with the conflicting requirements of the various laws with any degree of safety. The law does not apply to the factory mutuals or to the stock companies in the Factory Insurance Association, this concession being due to the influence of the cotton mill owners who want low-rated protection continued on their sprinklered risks. It is understood, however, that none of the stock companies in the Factory Insurance Association will take advantage individually of their co-operative exemption.

The Ontario Fire Marshals' Act.

An Act to amend the Fire Marshals' Act of Ontario passed its first reading before the Ontario Legislature on the 9th of March. The Act contains the following sections:

"Every person sustaining, or claiming to have sustained a loss by fire on property in Ontario insured wholly or partially in an insurance company not licensed or registered under The Ontario Insurance Act, shall report to the Fire Marshal within three days after the occurrence of the fire the particulars of such insurance, the date of the fire, and such other information as may be called for by the regulations, and he shall also within ten days after completing proofs of loss against the company in which he is so insured file with the Fire Marshal a full statement of the amount of loss claimed from every such company."

"Every person sustaining, or claiming to have sustained a loss by fire on property in Ontario insured in a company not licensed or registered under The Ontario Insurance Act shall pay to the Treasurer of Ontario an amount equal to one per cent. upon the gross amount of loss claimed upon or paid or payable by such company whether the amount is paid in Ontario or elsewhere."

No objection can be raised against the taxation of unlicensed insurance companies in such a manner as to place them on equal terms of competition with insurance companies licensed to transact business in Canada. Additional taxation, if properly applied, is obviously justified as a special war measure. This new taxation on unlicensed insurance, however, is neither useful nor logical. The amount of revenue produced will be almost negligible, while the tax will come into operation only at a time when it will cause the maximum amount of annoyance and inconvenience to policyholders.

If the intention of the Act is to impose a tax on the purchasers of unlicensed insurance, its effect will be to penalize only such individuals and firms who have been unfortunate in having a fire and may need all the funds available to rebuild or keep their industries going in the province. If, on the other hand, it is hoped that the burden will be borne by the insurance companies themselves, an act which imposes a tax on a company in the exact ratio in which that company is already suffering from other losses, can scarcely be considered ideal.

A tax of 1 per cent. of the gross premium is already levied on unlicensed insurance placed in the Province of Ontario, and a monthly declaration of all such insurance is rendered to the Provincial Insurance Department. If it is considered necessary or advisable to increase this tax, as a war measure, one per cent. additional on the premium would be fair and reasonable, but the present proposal is unjust.

CANADA'S SUGAR BEET PRODUCTION.

It is estimated by the Census and Statistics Office that, in 1915, 18,000 acres of sugar beetroots were grown in Canada, all in Ontario, for the manufacture of beetroot sugar, as compared with 12,100 acres in 1914. The total estimated yield of roots in 1915 was 141,000 tons, as compared with 108,600 tons in 1914, the average yield per acre being 7.83 tons, as compared with 8.98 tons in 1914. At an average price of $5.50 per ton, the total value of the crop in 1915 was $775,500, as compared with $5.99 per ton and a total value of $651,000 in 1914. The production of refined sugar made from Canadian sugar beets grown in 1915 was returned as 36,838,267 lbs., as compared with 27,545,248 lb. in 1914 and 23,964,272 lb. in 1913.

INVENTORYING THE WEAK SPOTS.

In addressing a body of Credit Men on "Practical Methods of Fire Prevention," Paul A. Colwell, the secretary of the Providence R.I. Insurance Association, invited his hearers to accompany him mentally on a tour of inspection over their own firms' premises. He started in by taking them on the elevator, in imagination, to the upper floor of a large wholesale house—taking each floor in succession in the course of descent. First there was noted that a fuse in the cut-out on the top floor guarding the electric hoist had very evidently been blown out some time since, a piece of copper wire having been put in place of the circuit protector by the up-and-down man—a proceeding similar to plugging up the safety valve in a power boiler.

In the course of inspection there were found electric lamps hung over tables and stock racks fed by ordinary light weight lamp cord run along in any convenient place with bare staples securing it to the woodwork, and in some places touching other wires (telephone or bell) without any intervening protectors; also, some lamps hung by their cords on nails, and a few portable lamps lying on inflammable stock without substantial guards thereon. Who installed this extra work? The janitor. Result—recommendation No. 1—"All electrical wiring must be thoroughly overhauled and brought up to standard, and all future work to be done in strict compliance with the Underwriters' electrical code."

Thin skylights, not of wire glass nor with protecting screens, and unenclosed stairways that in case of fire would become veritable flues, are other defects noted. It's the old adage of the weakest link in the chain; to make each floor separate, all openings (elevators, stairs, light wells, chutes, etc.) must be amply protected.

Carelessness as to basement conditions is too prevalent. "Familiarity breeds contempt," truly. The employees are accustomed to the litter and think little of it and laugh at the inspector who is making a "kick" about such conditions. But will the man trapped in the cellar with only one stairway laugh when he tries to go up and get out on the street above? "The cellar is the most prolific source of the origin of fires, both in stores and houses," is Mr. Colwell's final word of warning.

QUEBEC'S TECHNICAL SCHOOLS.

Technical Schools recently formed the subject of questions in the Queebc Legislature, and some interesting information was given by the Provincial Registrar in regard to these schools in Quebec. There are now five technical schools in the province, those found namely at Montreal, Quebec, Shawinigan Falls, Sherbrooke, and Beauceville. At Montreal there are eight professors and eight foremen; at Quebec, five professors and four foremen instructors. Shawinigan Falls has a teaching staff of seven, Sherbrooke three, and Beauceville five religious professors.

The number of students attending the various technical schools is as follows: At Montreal, 720; Quebec, 319; Shawinigan Falls, 184; Sherbrooke, 11; and Beauceville, 40. Forty-five students obtained diplomas at Montreal, and in addition 211 certificates of capacity were given to students who followed the night course. At Quebec 19 students obtained diplomas. The Shawinigan Falls school has no graduates as yet, as none of the students have been there four years. Thirteen students obtained diplomas at Beauceville, Sherbrooke gives only certificates of capacity. Graduates of the Montreal school are now engaged in industry as machinists, electricians, joiners, blacksmiths, foundrymen and draftsmen, and the statement was made that many already have enviable situations considering their age.

It was stated also that as a rule the students are appreciative as may be seen by the many applications for former students sent to the school this year. All those who graduated at Quebec are engaged in industry either as foundrymen, draftsmen, machinists, etc. Students from the schools at Shawinigan Falls and Beauceville became engaged in industry. After following the course for two years those who obtained certificates of capacity from the Sherbrooke school went to the various technical, polytechnic, surveying or forestry schools or found places in workshops as draftsmen. Five are engineers, four are surveyors, three are assistant bridge engineers, 32 are draftsmen, two are caricaturists, and seven are soldiers.

The cost of the building, furnishing and plant at Montreal, was $63,187; at Quebec, $405,359. A grant of $10,000 was given the Beauceville school as aid towards the cost of building it. The other schools are private institutions subsidized by the Government. The Government has paid out for the maintenance and other expenses of the Montreal school $228,000, and for Quebec $197,411. Expenditures on account of the schools at Shawinigan Falls, Sherbrooke and Beauceville have been $12,500, $8,000 and $3,000 respectively.

TRANSPORTATION

By J. E. WALSH

Transcontinental Rates.

"Lake and Rail," and "Rail, Lake and Rail."

IN the last issue it was announced that the railways had given notice that rates in their transcontinental commodity tariff would not be subject to deduction of differentials for "all water" or "rail and water" transportation east of Fort William, Port Arthur, Westfort, Ontario, or Duluth, Minn., when the rate "all rail" from Toronto-Montreal rate group points is lower than $1.25 per 100 lbs.

The railways have, as a result of a conference, reconsidered their decision, and are now publishing tariffs providing as follows:

Where the commodity rate is—	The differentials will be Via Lake and Rail.	Via All Water.
Under 80c. per 100 lbs	None	None
Between $0.80 and $1.00, incl. per 100 lbs	2c.	4c.
" 1.01 and 1.20 " " "	3c.	5c.
" 1.21 and 1.40 " " "	4c.	6c.
" 1.41 and 1.60 " " "	5c.	7c.
" 1.61 and 1.80 " " "	6c.	8c.
" 1.81 and 2.00 " " "	7c.	10c.
Over 2.00 " " "	8c.	12c.

The effect of this is to materially reduce the difference which formerly existed between the "all rail" and "lake and rail" rates, and it will, no doubt, throw considerable traffic to the rail lines which formerly moved lake and rail or all water.

There is to be no change in the present class rates "all rail" or "lake and rail"; the former differentials will be continued.

No change is proposed in regard to traffic for the Middle West.

Transcontinental Rates.

The Interstate Commerce Commission has within the past few days been listening to an application from Spokane and other inter-mountain cities for a readjustment of the present freight rates from the East to the Pacific Coast. The applicants contend that water competition via the Panama Canal is no longer a factor and therefore rates to Pacific Coast points should not be lower than to intermediate points. This contention was established by the Interstate Commerce Commission and upheld by the United States Supreme Court in the Spokane rate case.

Shortly after this case, which had dragged in the Courts from 1893, was disposed of, the Panama Canal was opened, resulting in an almost entire diversion to the water route of traffic originating in the Atlantic States for the Pacific Coast. The U. S. transcontinental lines, recognizing their inability to meet this competition at the existing rates, were, on application to the Interstate Commerce Commission, given authority to publish certain commodity rates, carloads and less, to the Pacific Coast, regardless of the rates in effect to inter-mountain territory. There is a good deal of speculation as to the outcome of the application, as the law in the United States provides that when rates are reduced to meet water competition they must remain in effect for at least two years.

At the hearing in Washington on the 24th of April some of the officials of the steamship lines, formerly operating between the Atlantic and Pacific Coasts via the Canal, took a prominent part. A representative of one of these lines declared that vessels can be used more profitably in foreign trade and that it will be five years before the Canal will be permanently opened. He stated that at the present time there are no companies engaged in the Canal traffic, although at one time there were five companies operating regular services over that route. In justification of the contention that the vessels had been taken off permanently another witness said: "The foreign trade is paying about two and one-half times better than the coastwise trade." It was further pointed out that notwithstanding these better profits in foreign trade, a few ships would have been retained in the Panama service merely to retain a name in that trade, had the steamship people been able to obtain any assurances from the authorities that the Panama Canal will be kept open permanently. It was mentioned that the engineers in charge of the Canal have found a large rocky ledge which is gradually moving towards and closing the Canal. Until this is absolutely removed it is impossible to assure that the Canal will be permanently opened. The witness said it would require two years more to remove this ledge, and that it would probably be five years before the authorities could give definite assurances that the Canal was permanently open and free from slides.

The United States transcontinental lines are preparing to take advantage of the changed conditions, as several meetings have recently been held in Chicago, evidently for the purpose of determining what readjustment of rates will now be made.

Transcontinental Rates—Mixed Cars.

It was announced in last month's issue that the railways had cancelled the rule providing for the shipment of certain commodities in mixed carloads.

Following recent negotiations the application of the rule has been reinstated until a general revision of the transcontinental commodity tariff is made, which it is expected will be about July 1st.

Whilst it is intended to discontinue the application of the rule with the new issue, assurances have been received that consideration will be given to specific cases where it is shown that an interference with trade will result.

Rise in Ocean Freight Rates.

The increase in the rates on grain, one of the principal exports from Canada to the United States, from New York to Liverpool in the last two years has been about 900 per cent., while the increase in the rate on flour has been 500 per cent., and the increase on provisions 400 per cent.

The more rapid increase on grain is accounted for by the fact that in ordinary times grain is carried at especially low

rates because of its desirability as ballast and because it can be easily taken on and discharged.

The shortage of ships that has led to the remarkable increases in shipping rates is attributed to the following causes in the letter to the committee. (1) The elimination of the merchant ships of Germany and Austria-Hungary; (2) the withdrawal of merchant ships for military and naval purposes; and (3) the loss of ships through submarine and mining operations.

In January, 1914, the rate on grain from New York and Boston to Liverpool was 4.1 cents per bushel; one year later the rate from New York to Liverpool was 18.3 cents and from Boston to Liverpool was 13.2 to 15.2 cents per bushel. In January, 1916, the rate from New York to Liverpool was 40.6 cents per bushel and from Boston to Liverpool it was 34.5 to 36.5 cents. From these data it appears that the rate on grain from New York to Liverpool was, in January, 1916, about ten times as high as in January, 1914, while the rate from Boston to Liverpool was only about nine times as great. In January of the present year grain could be shipped from 4 to 6 cents per bushel less from Boston than from New York. The higher rate from New York is probably due to the long delays and high demurrage charges resulting from the present congestion at the port of New York.

The advances in rates from New Orleans to European ports have been fully as pronounced as the increases from New York to the same ports. At both New York and New Orleans, the rate on cotton shipments to Liverpool has been increased about 900 per cent. in the past two years, but it is still far cheaper, as far as the ocean rate is concerned, to ship cotton from New York, in spite of its congested condition, than from New Orleans. On Jan. 1, 1916, the rate per 100 pounds of cotton was $2.25 from New York and $3 from New Orleans.

Bills of Lading for "Lake and Rail" Shipments Should Show Value of Each Consignment.

The following circular has been issued by the Canadian railways, and it is suggested that members comply with the request contained therein:

> Now that navigation on the Great Lakes is open, the attention of shippers is drawn to the importance of showing on their shipping bills the value of their shipments for marine insurance purposes.
>
> Rates to Lake Huron ports, Sault Ste. Marie and other Georgian Bay ports, also Fort William, Port Arthur Westfort, and points west thereof, include ordinary marine risk, but in order that the railway company may place proper insurance, it is necessary that shippers show the total value of each consignment on the face of the shipping bill.
>
> The attention of consignors to this matter will expedite the movement and overcome any possible delay, in this respect, to their shipments forwarded via the Lake and Rail route.

The Railroad Wage Grab.

The *Manufacturers' News* of Chicago, Illinois, voices a strong protest in a recent issue against the threatened increase in the wages of railroad employees in the United States. It says,—We'd like every citizen—manufacturer, merchant, workingmen, professional, semi-pro, or plain piker —and citizeness, to study this proposition carefully.

Some time during the next two or three months you'll have to vote on the proposition to raise the wages of 300,000 railroad employes 25 per cent.

"Nonsense," you say. "We don't have a vote. We don't have anything to do with it."

If you haven't a vote you should have.

"Why?"

Because the $100,000,000—most of it—will come out of your pockets.

"How's that?"

Every wage advance adds to the cost of living. You are paying more to ride on the railroads now than you were a few years ago, aren't you? Yes, and you'll pay still more, because the railroads have got to have more money for passenger and freight transportation. "What's the reason?"

The interstate commerce commission will tell you it is on account of higher wages for railroad employees. The men who operate the trains get 45 per cent. of the entire receipts.

You are likewise paying more for coal, for flour—for nearly every other foodstuff. You are paying quite a bit more rent. We know you are. We are paying more ourselves—everybody is.

Oh, rent touches you, eh? You have noticed that it has advanced about 25 per cent. in the last few years for the same kind of a flat?

You don't see how railroad wages can affect rent?

My dear fellow victim of the high cost of living, haven't you enough wit to figure that the increased cost of building material—steel, brick, stone, glass, hardware—everything that goes into your flat—adds to your rent? What adds to the cost of building material? Wages first; transportation second.

You may have heard that wages of men in the building trades are considerably higher than they were a few years ago.

Who do you suppose pays for the increased cost of building? The landlord? Ask him? He has troubles enough to pay his taxes. No, gentle inquirer, the landlord does not pay for the increased cost of labor and material and transportation. You do.

Every time wages are advanced in the country the cost of living advances correspondingly. That is a fundamental law.

If you let the railroad employees gouge their employers out of $100,000,000 a year, you, as the ultimate consumer, finally will pay the bill.

You may be a manufacturer. You may be a mechanic. You may be a policeman. You may be a clerk in a department store. You may be a school teacher. You may be a preacher. It makes no difference.

If you are a working man you can't escape your share of the burden and you can't pass it along. By voting for an increased wage for the railroad men you are making your dollar smaller. You are forcing yourself to economize so that an already highly paid class of workers may have more luxuries—at your expense.

WOODEN SHIPBUILDING.

There has been some enquiry in St. John respecting the construction of wooden vessels to supply the demand that has arisen for ocean tonnage. It would not be surprising as a result if there should be a revival of life in some of the old wooden shipyards that have been silent for the past quarter of a century. Such a revival would be of the greatest benefit to the maritime section of Canada, and it would serve to stimulate the desire for the establishment of a steel shipbuilding and repair industry in this section.

TRADE ENQUIRIES

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

460. **Air Brake for Street Cars.**—An inventor of a patented air brake, getting power from the axle of the car, would like to communicate with manufacturers interested in placing of it on the market.

461. **Tussah Silk Yarn.**—A textile manufacturing company is desirous of getting in touch with anyone capable of supplying tussah silk yarn.

462. **Petroleum and Lamp Black Paste.**—A Hamilton company has small quantities of these materials to dispose of. Petroleum is suitable for use in the manufacture of butter paper.

463. **Birch Lumber.**—A large lumber firm operating in New Brunswick is desirous of getting in touch with users of a good grade of birch lumber. The stock at present is mainly in 2 x 6's from ten to fifteen feet lengths, but there are also boards 4 x 6's and 4 x 4's. Full particulars as to price and freight charges can be supplied.

IMPORT TRADE ENQUIRIES.

464. **Crochet Work.**—A correspondent in India offers to supply crocheted goods consisting of laces, insertions, collars, tea cloth borders, tea cosies, blouse fronts, babies' bonnets, handkerchief borders, etc. Price lists and catalogues can be furnished on direct request to our correspondent.

EXPORT TRADE ENQUIRIES.

465.—Through the courtesy of the French Chamber of Commerce, Paris, Canadian Section, we have been supplied with a number of copies of the Annual Report. This shows the activities of the Section, and also has a schedule on recent tariff changes on goods going into France. The Secretary of the Canadian Section desires us to state that he will be very glad to hear from any Canadian firm whose goods may be profitably exported to France, and on receipt of such information they will give as much assistance as they possibly can towards developing greater trade between Canada and France.

466. **Log Haulers.**—A Newfoundland company would like to hear from Canadian manufacturers of steam or gasoline log haulers such as are used for hauling logs out of the woods in winter.

467. **Rope and Twine.**—A Belfast correspondent, part of whose business is to sell the above named articles, claims that there is a good market for all sorts of cotton, hemp and jute twines, and also ropes, baling cords, etc. He will be glad to get in touch with any one capable of supplying these materials.

468. **Agencies.**—A well recommended firm of produce and general merchants in East London, South Africa, desires to communicate with Canadian manufacturers who would like to be represented in that country.

469. **Produce and Foodstuffs.**—A general commission merchant in Demerara would like to hear from Canadian manufacturers of all kinds of foodstuffs. He sells goods on commission and pays by sight draft through local banks at 10, 20 or 30 days' credit.

470. **Hardware or Metal Agency.**—A well recommended English firm, said to have a good connection, are desirous of representing Canadian manufacturers of any hardware or metal line.

471. **Paper.**—A newspaper publisher in Fiji Islands asks for quotations on newspaper f.o.b., Vancouver, and also on writing paper and general stationery. Further particulars can be supplied on application.

472. **Agencies.**—A commercial traveller with considerable experience in many of the Pacific Islands and parts of Asia would like to get in touch with manufacturers of woodenware, axes, shovels, picks, hollow ware, enamelled and aluminum ware, paper of all kinds, and iron and wire goods. Particulars as to remuneration, etc., will be supplied on application.

473. **Glazing Bar.**—We have a sample and illustration of an English made glazing bar. This is said to be fully protected by patents in Canada, and Canadian patent rights for its manufacture are for sale. Interested parties can obtain fuller particulars from this office.

474. **Woollen and Cotton Goods, Fancy Goods.**—A correspondent in Newfoundland, intending to open a general merchandise business, would like to hear from Canadian manufacturers of sundry articles usually sold in such a business. He is also interested in hearing from makers of dress goods, flannels, flannelettes, cotton goods and haberdashery.

475. **Writing Paper.**—We have been equipped with samples of paper by a New Zealand correspondent who desires to communicate with Canadian manufacturers interested in supplying paper of this class. We have fuller particulars as to sizes, weights and quantities that will enable interested manufacturers to quote prices per pound as requested.

476. **Agency.**—A manufacturers' agent in Melbourne, Australia, already representing by sub-agencies two or three Canadian firms, would like to enlarge his Canadian connection. He is interested in aluminum ware, cornice poles and fittings, burlap, advertising novelties and perforated chair seats. Particulars of remuneration, etc., will be furnished to interested manufacturers on application.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

477. **Agencies.**—A manufacturers' agent, with offices in London and the West Indies, desires an agency for Canadian flour, oats and feed, and manufactured goods in hardware lines, including cordage and enamelled ware.

478. **Agencies.**—A manufacturers' agent in Trinidad desires to communicate with Canadian firms manufacturing shirts and underwear.

479. **Leather Board.**—A London firm is in the market for leather board such as is used for the manufacture of boots and shoes, and would like to hear from Canadian manufacturers.

480. **Dummy Rifles of Hardwood,** from 3-inch to 3-4-inch, turned 2 feet down from handle, remainder rough turned; 35,000 required. (For drawing refer to File A1665).

481. **Dry Colors for Printers' Inks.**—One of the leading manufacturers of printers' inks in Australia requires small samples and lowest wholesale quotations f.o.b. steamer for dry colors suitable for their purposes. All colors are used, but those in particular demand at the present time are reds, blues, greens, violets and browns.

482. **Liquid Resin, Formaldehyde and Caustic Potash.**—A Glasgow firm desires to know if Canadian firms can supply the above.

483. **Round Tin Stitching Wire.**—A Scotch house asks for quotations.

484. **Calcium Chloride.**—A London firm is desirous of getting into communication with Canadian producers of calcium chloride.

485. **Steel Billets and Wire Rods.**—A Coatbridge firm asks for Canadian sources of supply.

486. **Broom and Hoe Handles.**—A firm of Hull importers wishes to be placed in touch with shippers prepared to supply broom and hoe handles.

487. **Filing Cabinets and Office Fixtures.**—An English firm desires quotations on filing cabinets and office fixtures.

488. **Flooring and Strips.**—A firm of Hull timber importers are in the market for maple flooring, maple strips, 1 1-4-inch by 1 1-2-inch by 3-inch, and maple wood block flooring.

489. **Telegraph Poles.**—A Hull timber merchant wishes quotations on telegraph poles, c.i.f., Hull. Specifications as to size may be obtained from the Department of Trade and Commerce, Ottawa. (Refer File A1843.)

490. **Kraft Brown Paper.**—A South African merchant firm in London is in the market for kraft paper, and asks for names of Canadian manufacturers.

491. **Handles, Broom and Brush.**—A Bristol firm wants broom and brush handles of ash or alder; also brush stocks or boards, preferably ready to receive bristles or fibre.

492. **Glass.**—An English firm of glass importers enquires for Canadian exporters of glass for lighting purposes and table use, to replace supplies formerly imported from Germany, Austria and Belgium.

493. **Agency.**—A South African commission house with offices in Cape Town and Johannesburg and covering all centres of South Africa, requests catalogues and prices with all details covering sanitary closets.

494. **Representation.**—A South African manufacturers' representative is prepared to take up agencies of Canadian-made enamelware, hardware, boots and shoes, clothing, shirts and overalls.

495. **Calcium Carbide.**—A London firm asks to be placed in touch with Canadian manufacturers of carbide of calcium, with a view to shipment to Australia.

496. **Spring Press Studs.**—A London enquirer wishes to get into touch with Canadian manufacturers of brass spring studs, sample of which and other particulars are in the possession of the Department of Trade and Commerce. (Refer File A2008.)

497. **Leather.**—A Chicago firm who are large users of leather desires to be put in touch with Canadian tanners in a position to supply the following: Sheep russet, orange and brown, 125 to 135 feet spread. Strap, 2-ounce to 10-ounce orange, brown, chocolate and black.

498. **Evaporated Milk Powder.**—A Hull firm wishes to hear from manufacturers of evaporated skimmed milk powder.

499. **Wire Rope.**—A firm in India desires quotations and price lists from Canadian manufacturers of wire rope for use on logging engines. They desire to make immediate purchase, c.i.f., Calcutta or Rangoon, if possible, or f.o.b., Montreal or New York. Quotations are desired on 1,000-foot lengths, inch or inch and one-quarter rope.

500. **Bright Milk Steel Shafting.**—A London firm wishes to obtain from Canadian manufacturers quotations for ten tons of bright, mild steel shafting, according to specification in the possession of the Department of Trade and Commerce, Ottawa, for shipment to Australia. (Refer File A2008.)

NEW CANADIAN INDUSTRIES

A List of Recent Incorporations, With Such Particulars as Are Available Regarding Their Plans.

It is interesting to note that the Baldwin Mfg. Company of Canada, Limited, Winnipeg, Manitoba, have taken out letters of incorporation empowering them to manufacture, among other things, the "Baldwin Standing Grain Thresher." This may be an indication that some attempt will be made to follow the method of threshing considerably used in much drier climates. The company is capitalized at $100,000.

The Bournonville Rotary Valve Motor Co., Limited, head office Toronto, authorized capital $500,000, have been empowered to embark on the field of manufacturing rotary motors for automobiles, aeroplanes, etc.

The Birmingham of Canada is evidently to have another small addition to its many metal working plants. Burlington Metals Co., Limited, authorized capital $40,000, have taken out letters permitting them to manufacture copper, brass, bronze, iron, steel and all other metals, with head office at Hamilton.

A $100,000 company has been formed under the name of Canada Boxboard Co., Limited, Toronto, Ont., to produce all sorts of cardboard, strawboard, boxboard and other materials and the products of these different boards.

Cheap electric power has scored another triumph for the Township of Stamford. Canadian Aloxite Co., Limited, authorized capital $100,000, proposes to utilize very many h.p. annually in the production of synthetic abrasives.

A company already operating in Grimsby, manufacturing, among other things, opera and moving theatre chairs, have taken out letters of incorporation with an authorized capital of $100,000. The Canadian Steel Specialty Company, Limited, is the company referred to.

The Crowley Mfg. Co., Limited, of Toronto, capitalized at of $100,000, are acquiring the business formerly carried on by the unincorporated company of the same name, and will continue to manufacture mouldings, picture frames and other wood products.

The manufacture of cutlery seems to be occupying the minds of a number of Montreal people. One result of this has been the incorporation of the Dominion Cutlery Company, Limited, capitalized at $100,000, and empowered to manufacture cutlery, iron, steel and other metals and metal work, plated ware, etc. It will be very interesting to note the progress of the manufacture of this new line in Canada.

Some local capitalists of the town of Essex and experienced engineers in Detroit have combined forces for the production of small farm tractors, motors, etc. This company will be known as the Doyle-Dennert Tractor Company, Limited, Essex, Ont., and is capitalized at $50,000.

The Hayes Wheel Co. of Canada, Limited, capitalized at $200,000, with head office at Chatham, Ont., have been incorporated with power to manufacture wheels, hubs, rims and all parts thereof. It is understood that this company will specialize in automobile wheel materials.

Montreal is promised an addition to the already large circle of confectionery manufacturers by the incorporation of the Homo Chocolate Creamery Co., Limited, at $100,000.

Apparently an additional effort will be made to give Canada another aeroplane factory. M. F. P. Aeroplanes, Limited, head office, Toronto, capital $500,000, have been empowered to manufacture all sorts of aeroplanes, hydroplanes, etc. It is understood that this company is associated with the Bournonville Rotary Valve Motor Co., Limited, mentioned above.

A motor truck company in Windsor, that has heretofore been comparatively small, evidently sees far enough into the future to branch out with the resulting incorporation of the Menard Motor Truck Company, Limited, with a capital of $150,000. This company will continue to manufacture trucks, etc., formerly produced by Moses L. Menard.

Slowly but surely the different lines which show any promise of future remuneration are being seized upon by Canadian enterprise. One of the latest features is the Snyder Snap Button and Fastener Co., Limited, with head office in Toronto, and a capital of $40,000. This company is empowered to manufacture all sorts of snap buttons and fasteners for use on clothing and other kinds of apparel.

A company appearing under the name of Yocum Faust, Limited, has been capitalized at $50,000 and incorporated, with head office in London, Ont., to carry on business of analytical chemists and to manufacture and sell chemicals, dyes, oils, tanning materials, etc. It is to be hoped that this business will be established on a satisfactory basis, especially in the tanning material where plenty of scope is given to enterprising manufacturers.

DEPRECIATION.

The average concern objects to writing off each year a large proportion of its assets for depreciation. Of course there is bound to be some loss from this cause, but we hardly think so many large institutions are wrecked on account of the non-writing off as accountants would have us believe.

Depreciation is larger where machinery is in use, and this fact should be, and is, borne in mind by business men.

The establishment of a reserve out of profits earned, for depreciation, has much to commend it, as replacements can be made at any time from this reserve, and in the event of fire it is advantageous to show on the books cost of the property that has been destroyed.

If depreciation is continually deducted, an insurance adjuster may have considerable leverage which he does not require.

A reserve fund is an asset of the company, and any amount not necessary to use for replacements is available for distribution to the stockholders.—*South Works Review.*

SPRING CLEANING.

Some manufacturers regard the spring cleaning of plants as important as the housewife's rug beating, painting and scrubbing. Others try to keep their plants so clean all the year around, like some houses, they won't need cleaning.

The spring clean up has a lot to recommend it. Dirt, dust, grime, rubbish of all sorts, is bound to accumulate during the winter months. Often the windows are so covered with the dust and other matter deposited by the elements that they seriously interfere with the free admission of light and sunshine. They haven't been washed for months.

Clean windows not only are important for their moral effect, like a man's white collar or a well blackened pair of shoes; they add to the productivity of the factory. A workman who can see better can perform his work with greater expedition, safety and satisfaction. Furthermore clean windows have a cheering effect on the average individual, whether they may be in a house or a factory. So it pays to wash the windows.

Cleaning up the rubbish in the corners of a factory building or yard often will prevent a serious fire, as well as adding to the sightly appearance of the plant, for a plant can be made as attractive appearing as any other structure. Industry is dignified, if clean and self-respecting.

Last year about this time, and for several years back, some enterprising publicists, who are not the less entitled to credit because some of them may have profited by the sale of soap or paint, were busily engaged in preparing for the "annual clean up and paint up week." The slogan was heard all over the land and deserved the popularity it achieved. There are indications that the campaign will be conducted upon the usual enthusiastic lines this year. "Clean up and paint up" already is beginning to be agitated.—*Manufacturers' News.*

Condensed Advertising

FOR SALE.

Clover Leaf Cement Mixer, complete with engine, tongue, water tank, loader frame and loading bucket. Capacity 8 cubic feet. Only used once. Is in first-class condition. Will sell cheap. For further particulars apply to The Stratford Manufacturing Company, Limited.

WAREHOUSE SPACE TO LET IN WINNIPEG.

"TO LET, on and after March 1st, one floor in our modern warehouse on Dewdney Street, opposite C.P.R. station, Regina. Size of building, 50 x 108; steam heated throughout, elevator, railway siding, office accommodation, also good vault in building. Water and heat supplied by ourselves to tenant. The balance of this building is occupied by ourselves and the Northern Electric Co. A splendid opportunity for anyone requiring a distributing warehouse in the West.

"For terms, etc., apply to B. F. Ackerman, Son and Company, Limited, Peterborough or Regina."

FOREIGN REPRESENTATIVE.

The writer is well acquainted with the furniture and hardware dealers of New Zealand. There is a fine opportunity for Canadian manufacturers to build up a profitable export business in these lines. Would be willing to represent a first-class manufacturer on expenses and salary paid on results. Excellent references. Address A. B. C., INDUSTRIAL CANADA Office, Traders Bank Building, Toronto.

CANADIAN AGENCIES WANTED.

A commission firm of Montreal, the principal having resided for many years in the Old Country, particularly in France, well acquainted with foreign commercial methods, speaking French and English, wishes to obtain Canadian agencies for France, Italy, Switzerland, Portugal and Spain Apply M. M., INDUSTRIAL CANADA, Traders Bank Building, Toronto.

WANTED.

Girl capable of taking charge of finishing room in knitting factory manufacturing sweaters and kindred goods. Apply Colonial Knitting Company, Guelph, Ont.

WANTED.

Good knitter or man able to take charge of knitting room in sweater factory producing flat and circular goods. Apply Colonial Knitting Company, Guelph, Ont.

FACTORY IN NIAGARA FALLS, N.Y., FOR SALE.

Factory building for sale in Niagara Falls, N.Y.; three storeys and basement; 180 ft. long by 42 ft. wide. It is of first-class construction, with perpetual light on three sides and 10 ft. lane on fourth side. There is also an annex to the mill of three storeys, 29 ft. by 19 ft., making a total of 24,333 ft., inside measurements. Plant is equipped with automatic sprinklers and a water tower of 30,000 gallons capacity. Insurance rates are low. A complete heating system is installed; also 100 h.p. Westinghouse motor, and 300 electric lights.

Main line of Erie Railroad runs along east side. For further particulars address Canada Hair Cloth Co., Ltd., St. Catharines, Ont.

SALESMAN WANTS POSITION.

Traveller with three years' experience and having good relations with merchants, asks a position in fancy goods and toys lines. Twenty-six years old, bachelor, and can give good references. Address: Ernest Daoust, 473 Gilford Street, Montreal.

ANNUAL STATEMENT OF BANK OF BRITISH NORTH AMERICA.

A feature of Canada's commercial life which has been of inestimable value during the stress of the past eighteen months has been the fine position maintained by its banks. The commencement of the war brought with it some new and startling conditions in the business world and the fundamental stability of our banks was amply proven by the manner in which they met these exceptional conditions.

Elsewhere in this issue appears the annual statement of the Bank of British North America. As was to be expected from a bank enjoying its efficient management, the report shows a satisfactory surplus of earnings over expenditure. After paying a dividend of 7 per cent. for the year, and after making liberal provision for the pension and other special funds, the bank carried forward $52,175.71 for the new year.

The Bank of British North America, with a paid-up capital of $4,866,666.67, has a Reserve Fund of $3,017,333.34, and Assets of $61,513,696.33.

Shurly & Derrett, Limited
TORONTO



Manufacturers of

TWINES

COTTON AND JUTE ROPE

MILL & SPINDLE BANDING, etc., etc.

THE BANK OF BRITISH NORTH AMERICA

ESTABLISHED IN 1836 Incorporated by Royal Charter in 1840
PAID-UP CAPITAL, $4,866,666.67 RESERVE FUND, $3,017,333.34

EIGHTIETH ANNUAL REPORT AND BALANCE SHEET

Report of the Directors of The Bank of British North America, Presented to the Proprietors at Their Eighteth Yearly General Meeting, on Tuesday, March 7th, 1916.

The Court of Directors submit the accompanying Balance Sheet to 30th November last.

It will be seen that the profits for the year, including $167,081.66 brought forward from 30th November, 1914, amount to $495,677.00, of which $194,666.66 was appropriated to a dividend paid last October, leaving a balance of $301,010.34, out of which the Directors propose to declare a dividend of 30s. per share, payable, less Income Tax, on 7th April next, leaving, after the special appropriations mentioned in the Balance Sheet, an amount of $52,175.71 to be carried forward.

The above dividend will make a distribution of 7 per cent. for the year.

The Dividend Warrants will be remitted to the proprietors on the 6th April next.

During the year ended 30th November last, the following six Branches and Sub-Branches have been closed: Fort George, B.C. (transferred to Prince George, B.C.); Lytton, B.C.; James Bay, Victoria, B.C.; Bella Coola, B.C.; Mount Dennis, Ont.; and Burdett, Alta.

The following appropriations from the Profit and Loss Account have been made for the benefit of the staff, viz.:—

To the Officers' Widows and Orphans Fund	$8,727.63
" " Pension Fund	47,628.62
" " Life Insurance Fund	7,786.66

London, 24th February, 1916.

The Bank of British North America. Balance Sheet, 30th Nov., 1915

LIABILITIES

Capital—20,000 Shares of £50 each, fully paid		$4,866,666 67
Reserve Fund		3,017,333 34
Dividends Declared and Unpaid		5,219 46
Profit and Loss Account:		
Balance brought forward from 30th November, 1914	$361,748 32	
Dividend paid April, 1915	194,666 66	
	$167,081 66	
Net Profit for the year ending this date after deducting all current charges and providing for bad and doubtful debts partly from undivided profit	328,595 34	
	$495,677 00	
Dividend paid October, 1915	194,666 66	
	$301,010 34	
Deduct:		
Transferred to Bank Premises Account	$973 34	
Transferred to Officers' Widows and Orphans Fund	8,727 63	
Transferred to Officers' Life Insurance Fund	7,786 66	
Transferred to Officers' Pension Fund	47,628 62	
Canadian Patriotic Fund	666 66	
Canadian War Tax on Circulation ($37,051.71)	37,051 71	
	102,834 62	
Balance available for April Dividend		198,175 72
Notes of the Bank in Circulation		4,733,253 91
Deposits not Bearing Interest		18,150,685 36
Deposits Bearing Interest, including Interest accrued to date		26,077,647 03
Balances due to Banks and Banking Correspondents in the United Kingdom and Foreign Countries		397,606 31
Bills Payable		1,556,798 60
Acceptances under Letters of Credit		1,197,794 95
Liabilities and Accounts not included in the foregoing		1,312,514 98
Liability on Endorsements	806,675 41	
Liability under Guarantee in respect of the Sovereign Bank of Canada	$300,000 00	
		$61,513,696 33

H. B. MACKENZIE, General Manager.

ASSETS

Current Coin and Bullion	$2,036,138 67	
Dominion Notes	8,540,160 82	
		$10,576,299 49
Notes of other Banks		460,411 08
Cheques on other Banks		2,169,209 29
Balances due by other Banks in Canada		7,760 49
Balances due by Banks and Banking Correspondents elsewhere than in Canada		1,652,789 82
Dominion and Provincial Government Securities not exceeding Market Value		111,160 01
Canadian Municipal Securities and British, Foreign and Colonial Public Securities other than Canadian—(including £300,000 Exchequer Bonds, £100,000 3½ per cent. War Loan, £200,000 4½ per cent. War Loan and £210,000 British Treasury Bill. All the War Stocks taken at cost)		4,430,970 44
Railway and other Bonds and Stocks		92,988 55
Call and Short Loans in Canada on Bonds, Debentures and Stocks		1,472,759 02
Call and Short Loans elsewhere than in Canada		5,526,216 66
Other Current Loans and Discounts in Canada (less Rebate of Interest)		23,267,045 87
Other Current Loans and Discounts elsewhere than in Canada (less Rebate of Interest)		6,214,693 12
Liabilities of Customers under Letters of Credit as per contra		1,197,794 95
Real Estate other than Bank Premises		3,559 54
Overdue Debts (estimate Loss provided for)		241,802 52
Bank Premises at not more than Cost, Less Amounts Written off		2,280,654 73
Deposit with the Canadian Minister of Finance for the Purposes of the Circulation Fund:		
Dominion of Canada 3¾ per cent. Bonds, £250,000 at 95⅞	1,166,479 17	
Cash	232,248 08	
		1,398,727 25
Other Assets and Accounts not included in the foregoing		408,853 50
		$61,513,696 33

E. A. HOARE, G. D. WHATMAN, Directors.

We have examined the above Balance Sheet with the Books in London, and the Certified Returns from the Branches, and we report to the Shareholders that we have obtained all the information and explanations we have required and that in our opinion, the transactions of the Bank which have come under our notice have been within the powers of the Bank. As required by Section 56, Clause 19, of the Bank Act of Canada, we visited the Chief Office (Montreal) of the Bank and checked the cash and verified the securities and found that they agreed with the entries in the books of the Bank with regard thereto. We further report that in our opinion, the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs according to the best of our information and the explanations given to us and as shown by the books and returns.

N. E. WATERHOUSE, FRANK S. PRICE, Auditors.

London, 24th February, 1916.



Taking it Easy in the Boss' Time

Of course they've "rung in." Bless your heart they did that long ago, right on time, away down at the factory entrance.

What about the time they lose in actually getting to work?

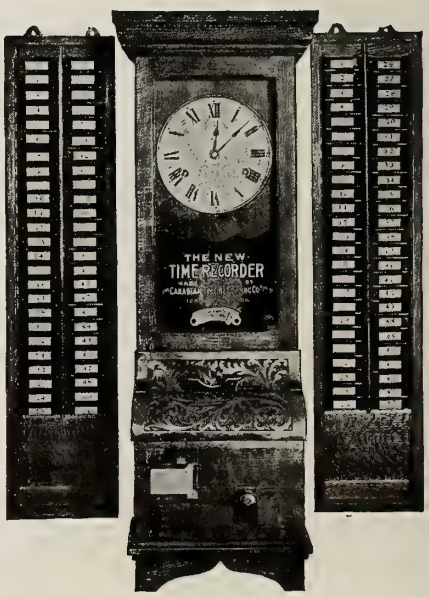
Don't say "I should worry, they're working on piece work— the loss is theirs." It isn't. You want your employees ***at work, on time,*** turning out as much of your product as possible in order to keep your overhead down.

Of course, if your employees are working on a time payment basis, then their delay in actually getting to work, from the time they have rung in, is even more serious. Then there is a direct wage loss as well as a loss in overhead expense, for light, power, heat, etc.

How are you going to cure this? Read the page opposite.

Remember we are the largest makers of Time Recorders in the world. Our Canadian plant can equip you with a system to suit any requirements.

Let us send you our latest folders and prices.



International Time Recorder
Prices $95 and up.

The International Time Recording Company of Canada, Limited

Toronto :
Ryrie Building
Yonge and Shuter Sts.

F. E. MUTTON,
General Manager

Montreal : W. A. WOOD, Jr.
Sales Agent
Cartier Bldg., Cor. McGill and Notre Dame Sts.
Phone M. 7025



Here's the way: "Departmental Time Recorders"

They get you every minute of the working time you pay for. No such thing as "taking it easy on the boss," because the Time Recorder is at the DEPARTMENT door, not the FACTORY door.



An International Dial Recorder—Fully Automatic
(Dial Recorder Prices run $85 and Up.)

Just think what a difference in your pay-roll, and output, this plan means.

Suppose you had 200 employees, and each one lost an average of 4 minutes twice a day between factory door and bench, and twice a day between bench and factory door. That's 3,200 minutes a day, at, say 30c. an hour, or an average daily loss to you of $16.00. That's over $4,800 a year.

What a price to pay for the privilege of doing WITHOUT Departmental Time Recorders! Can you afford it? What are your competitors doing? Can you risk their being able to underbid you because they make some such big saving and you do not?

Think this over. Our logic is right. It has been proven over and over again in the biggest plants on the continent.

Write us to-day for particulars and the cost of a Time Recording and Pay-Roll System that will exactly suit your business.

The International Time Recording Company of Canada, Limited

Toronto :
Ryrie Building
Yonge and Shuter Sts.

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General Manager

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Phone M. 7025

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

BRITISH COLUMBIA.

Mill Creek.

Fire caused a loss of $40,000 to the chipping shed and drying kiln of the British Columbia Sulphite Fibre Company.

Vancouver.

The Begg Motor Company has taken out a building permit for the construction of a $15,000 one-storey extension to its premises to be used as a repair shop and garage.

MANITOBA.

Brandon.

A building permit has been issued to the Imperial Oil Company for the erection of a warehouse in this city. The structure is to cost $10,000.

NEW BRUNSWICK.

Fredericton.

The Smith Foundry Company's building was recently damaged by fire to the extent of $5,000.

St. John.

The City Council has ratified the taxation agreement made with Messrs. T. McAvity & Sons in 1914, looking to the erection of a large iron and brass foundry on the Marsh Road, immediately adjacent to the I. C. R. tracks. It is understood that the firm have recently been awarded a heavy order for munitions and that they will rush the erection of their plant in order to fill this order. The agreement calls for the expenditure of $100,000 the first year. This the firm are prepared to do. The plant that the firm have in prospect will be one of the largest in the Lower Provinces.

St. Stephen.

Among the Dominion charters recently granted is one incorporating Ganong Brothers, Limited, of St. Stephen, with a capitalization of $1,500,000. The provisional directors are G. W. Ganong, W. K. Ganong and A. D. Ganong. The firm will continue to manufacture the famous Ganong candies.

NOVA SCOTIA.

Halifax.

*The Williston Steel Foundry Co., Limited, are at present erecting a new foundry across the harbor at Dartmouth. They propose to make steel castings of ordinary and high grades by the crucible method. They expect to cater largely to local trade, with the intention of feeling out the market for these products. The furnaces to be installed are of the patent tilting design, using coke for fuel under forced draft. Approximate cost of the new foundry will be $16,000.



It preaches Fresh Air

When our salesman calls on a prospective purchaser of Ormsby Swartwout Ventilators, he takes this little model with him. Better than a thousand words could do it, this miniature ventilator explains the principle of semi-mechanical ventilation.

Working on that principle, the

ORMSBY SWARTWOUT ROTARY BALL-BEARING VENTILATOR

pulls the bad air out of a building by the force of a partial vacuum. It affords constant air supply. When fitted with the self-cleaning pitched glass-top, it serves also as a serviceable skylight.

All sorts of work-rooms in factories, mills and foundries are successfully ventilated by Ormsby Swartwout. Send the coupon for "The Gospel of Fresh Air" — real stories of ventilation experience. It tells why ventilation pays.

Please send the "Gospel of Fresh Air."
Name.....Company.....
Address.....
.....(5122)

A. B. Ormsby Co., Limited
TORONTO
Associated with The Metal Shingle & Siding Co., Ltd., Preston, Montreal, Winnipeg

NEPONSET Paroid ROOFING

Waterproof, Durable Fire-Resisting

NEPONSET Paroid Roofing exactly meets the requirements of the Canadian climate. Back of every Roll of the Genuine Paroid Roofing is a record of 18 years' hard service on factories and railroad buildings.

It is so carefully made, you avoid the repair bills that add heavily to the cost of a cheap roof.



"Look for the Paroid Roll"

BIRD & SON
Dept. I, Hamilton, Ont.

Warehouses:
Montreal, Winnipeg
Calgary, Vancouver
St. John, Edmonton

The largest Manufacturers of Roofings, Wall Boards and Roofing Felts in Canada.

"Metallic" Building Materials

Quickly put-up buildings need not be flimsy

They can be substantial, weather-proof, fire-retardant and very economical, if you use "M.-R. Co." specialties. Not only economical to buy but cheap to put up, as they are quickly and easily handled by even "green labor."

"METALLIC" CLAPBOARD SIDING

Wood sheeting is unnecessary—nail it direct to the studding. Handsome, durable, fire-retardant and "different."

"EASTLAKE" GALVANIZED SHINGLES

The pioneers, and leaders for 30 years in the metal roofing world. Fire-retardant, very durable.

"EMPIRE" CORRUGATED IRON

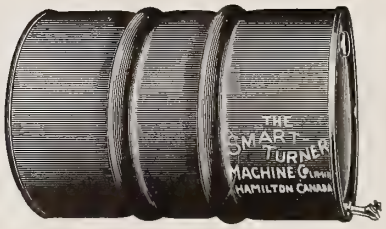
Every sheet true, uniform, full gauge, properly galvanized

Write to-day for prices and suggestions

THE METALLIC ROOFING CO., Limited
Manufacturers
TORONTO WINNIPEG



YOUR PLANT,
Though a High-class One, is Not Perfect
if You are Using
WOODEN BARRELS
for your Gasoline, etc.



Send for Our Catalogue Covering

Steel Barrels

which obviate all danger of leakage.

The Smart-Turner Machine Co.
Limited
HAMILTON ONT.



A Modern Industrial Plant Built Fireproof Kahn System

Daylighted with Kahn Steel Sash

E. A. Wallberg, Contractor — Dominion Tire Co. Building, Berlin, Ont. — Albert Kahn, Architect, Ernest Wilby, Associate

KAHN SYSTEM Reinforced Concrete

TRUSSED CONCRETE STEEL CO.
OF CANADA, LIMITED

Head Office and Works - - Walkerville, Ont.

BRANCHES:
Montreal Toronto Winnipeg

KAHN SYSTEM Reinforced Concrete

ALWAYS USE

Hammer Brand Plaster of Paris

Manufactured for Half a Century—the Standard of Excellence

CALCINED PLASTER · ALBERT MANUFACTURING COMPANY · HILLSBOROUGH, NEW BRUNSWICK · HAMMER TRADE MARK BRAND 1854 F

Try it and Compare Its Surface Covering Capacity With Other Brands

MANUFACTURED SOLELY BY

ALBERT MANUFACTURING CO.
Hillsborough, New Brunswick, Canada

EXPORT AGENTS: THE IMPERIAL EXPORT CO., LIMITED

MELBOURNE	SYDNEY	AUCKLAND	CHRISTCHURCH
17 Queen St.	Martin's Chambers, Moore St.	34 Fort Street	———St.

New Glasgow.

At a meeting of the board of directors of the Nova Scotia Steel & Coal Company, Limited, it was decided to proceed at once with the erection of another blast furnace at Sydney Mines, to cost from $200,000 to $300,000.

ONTARIO.

Belleville.

The Belleville Rolling Mills are now operating the 18-inch mill and will shortly have the 9-inch mill working.

Berlin.

Plans are being prepared for a factory to be built for the Canadian Regal Motor Co., Limited, 433 King Street East. Tenders will be called shortly. The estimated cost is $18,000.

A new factory will be erected here this summer by the Onward Manufacturing Company. The new plant will be three storeys, 45 feet by 100 feet.

Brampton.

The Acme Rubber Company propose to build a factory, at an approximate cost of $30,000, and a by-law will be submitted to the ratepayers.

Brantford.

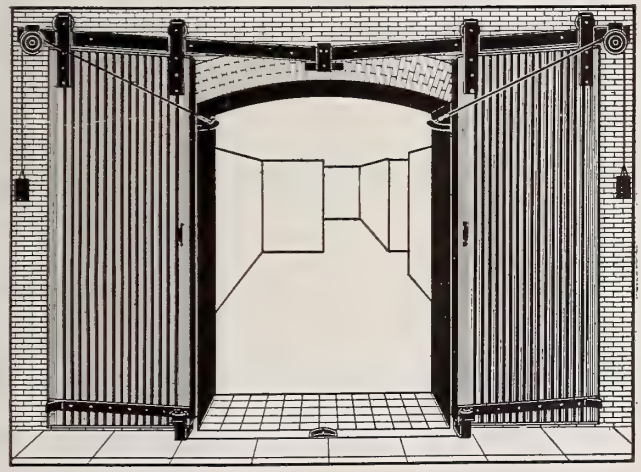
*The Waddell Preserving Co., Limited, are making an addition of brick and concrete construction to their present plant at a cost of $4,000. This addition, when completed, will serve as a boiling room where the product of the company will be prepared. The enlargement of the plant was rendered necessary by the increased demand for the company's product.

TANKS FOR PULP AND PAPER MILLS, CHEMICAL WORKS, OIL REFINERIES, ETC.

WE ALSO BUILD STEEL STRUCTURES TO SUPPORT THEM

GET OUR QUOTATIONS

MacKINNON, HOLMES & COMPANY, LIMITED
SHERBROOKE, QUEBEC



The Rest of Your Building Would Crumble in Ashes Before Fire Could Destroy

PEDLAR'S

Saino SHEET METAL FIRE DOOR

It cannot prevent mishap entirely. Nothing can. But it gives you the definite assurance that fire, however severe, will be held to the area in which it originated until help arrives.

Underwriters everywhere, unquestionably allow you lower rates, for they know Pedlar's Saino Fire Door reduces risk to the minimum for you as well as themselves.

Made with two walls of cross laid galvanized corrugated iron, with air spaces and asbestos sheets between, warping is impossible, and expansion and contraction are adequately provided for by means of patented telescopic channels and locks.

Write now for Tests, Illustrations, Testimonials and list of prominent users. Ask for Saino Leaflet I.C.

THE PEDLAR PEOPLE LIMITED
(Established 1861)

Executive Offices and Factories: OSHAWA, ONT. Branches: MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG

27-Z

Brockville.

*With regard to the statement made in the press that the Canada Foundries & Forgings, Limited, were about to make an extension to their plant at Brockville, the company announces that the matter is only in contemplation at the present time.

Elmira.

*Bauman & Letson, whose planing mill was destroyed by fire last month, are at present replacing it with a one-storey concrete building 70 by 90 feet, in which they will install necessary machinery for the operation of the manufacturing part of their business. Arrangements are being made to form a joint stock company which will be known as the Elmira Planing Mill Company, Limited.

Fort William.

Announcement is made that the mines and blast furnaces of the Atikokan Iron Company will be running full blast this summer. On account of the difficulty in the treatment of the ore it was found necessary to close the plant a few years ago, but a remedy for getting rid of the sulphur in the ore has been found and the company expects to commence work at once.

D. W. Davies, Manager of the Canada Iron Foundries, has announced that instructions had been received from the head office of the company in Montreal to open the pipe foundry at once. This will mean the entire plant will be running to full capacity.

Galt.

*The Perfect Machinery Company, manufacturers of a line of drills, hack saws, lathes and special machinery, having outgrown their original premises, are now building a new factory on Manchester Survey. This company was organized in a small way on May 1st, 1914. It has made steady progress and now employs some eighteen mechanics.

Gore Bay.

W. E. George proposes to erect a planing mill.

Hamilton.

The general carpentry and steel work contracts in connection with the erection of the addition to the factory of E. T. Wright & Company have been let.

Contracts have been let for an addition to the premises of the Steel Company of Canada.

The Hamilton Bridge Works propose to build a small steel and concrete addition to their premises at a cost of $7,500.

Plans have been prepared for a $6,000 addition to the plant of the Dominion Sheet Metal Co.

The contract for masonry and carpentry, steel work and roofing required in an addition to the premises of the Zimmerman Mfg. Company has been let to George Frid Company, 701 Bank of Hamilton Building. The approximate cost is $25,000.

The Grasselli Chemical Company have prepared plans for an addition to their factory, estimated to cost $30,000.

The Canadian Hart Wheels, Limited, will build an extension to their plant here.

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,
188 Yonge St., Toronto



Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

By the Toronto Furniture Co., *Limited*

"MANY A THING DIVINELY DONE BY CHIPPENDALE AND SHERATON."—Andrew Lang.

OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

STRUCTURAL DETAILS

Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.



Look for the Shop Mark inside the drawer.

TORONTO FURNITURE CO., LIMITED

Show Rooms and Cabinet Shops: 163-187 Dufferin Street, Toronto, Canada

*The Skedden Brush Company are at present erecting a new plant at 102 to 104 Bay Street North, which will be used exclusively for the manufacture of all kinds of brushes. A lot of new machinery will be installed, and when the plant is complete it will be one of the most up-to-date establishments of its kind in the country. The management expect to have it ready for operation early in June.

*The Peerless Weaving & Belting Co., Limited, which has recently been incorporated with an authorized capital of $150,000, has leased a factory on Arthur Street, which was formerly occupied by the Ludlam-Ainslie Company, which will start immediately equipping this factory for the manufacture of cotton and leather belts, automobile accessories, such as anti-rattler packing-radiator, lacing-brake lining, etc., and for the rebuilding of old leather belts. The scarcity and high cost of leather for belting purposes to-day is so extensive as to be almost prohibitive for this purpose. This company has a process for rebuilding old leather belts that make them as good as new and at about one-half the cost of new leather belts. This company will take over all Canadian rights of the Peerless Belting Company, of Gardenville, N.Y. The directors of the Canadian company are Edward de Ette Matteson, Buffalo; W. F. Frantz, Colden, N.Y.; Jacob Dilcer, Buffalo, and Edward F. Gingras, son of the president of the Peerless Belting Company, of Gardenville, who will superintend the Canadian factory.

*A controlling interest in the Maple Leaf Auto & Supply House has been bought by W. Ellis, who is erecting a suitable building for the transaction of the business of the organization. It is the intention of the firm to manufacture metal specialties, making such lines as metal garages, gasoline tanks, automobile parts, boat supplies and a general line of goods in iron, steel and other metals. The premises are on Barton Street, and H. J. Wise is manager.

*The Canada Wire & Iron Goods Company are erecting an additional storey on their King William Street frontage, which they will utilize as a stock room, thereby freeing valuable floor space for manufacturing purposes.

Harrow.

The W. Clark Company, Limited, 83 Amherst Street, Montreal, are considering the erection of a cannery. The estimated cost is $15,000.

Kingsville.

Fire completely destroyed the large plant of the Erie Tobacco Company. The loss is $60,000, partly covered by insurance. They intend to rebuild.

Merritton.

The contract for the construction of an electro-chemical plant for the Riordan Pulp & Paper Company has been awarded, at an estimated cost of $30,000.

Niagara Falls.

The Blystone Mfg. Co., of Cambridge Springs, Pa., has purchased a site here, and will commence within the next few weeks the erection of a plant for the manufacture of concrete machinery, tools, etc.

The Pollard Mfg. Co. will build a foundry, at an estimated cost of $10,000.

T H·E

Let our Engineers Report

HYDRO can certainly save you money on your power bills—it is doing so for many others—why not for you? Of course, whether the saving will be little or much remains to be seen, but it will cost you nothing and put you under no obligation to find out.

You at least know that the more Hydro current is consumed the lower the rates become.

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Toronto Hydro-Electric System

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Production and Thrift

"TO win the war with the decisiveness which will ensure lasting peace, the Empire will require to put forth its full collective power in men and in money. From this viewpoint it is our true policy to augment our financial strength by multiplying our productive exertions and by exercising rigid economy, which reduces to the minimum all expenditures upon luxuries and non-essentials. Only in this way shall we be able to make good the loss caused by the withdrawal of so many of our workers from industrial activities, repair the wastage of the war, and find the funds for its continuance. It cannot be too frequently or too earnestly impressed upon our people that the heaviest burdens of the conflict still lie before us, and that industry and thrift are, for those who remain at home, supreme patriotic duties upon whose faithful fulfilment our success, and consequently our national safety, may ultimately depend."—
SIR THOMAS WHITE, Minister of Finance.

PRODUCE MORE, SAVE MORE.
MAKE LABOUR EFFICIENT.
SAVE MATERIALS FROM WASTE.
SPEND MONEY WISELY.

LET US PRODUCE AND SAVE—

The war is now turning on a contest of all forces and resources—men, munitions, food, money. The call to all is to produce more and more. It may be necessary to work harder. The place of those who enlist must be taken by those at home, men and women, old and young. The more we produce the more we can save. Produce more on the farms and in the gardens. Save more and help to win the war.

LET US NOT WASTE OUR LABOUR—

In this war-time all labour should be directly productive or should be assisting in production. Make it as efficient as possible. If your labour is on something that can be postponed, put it off till after the war and make your labour tell now. Making war is the first business of all Canadians. Efficiency in labour is as important as efficiency in fighting.

LET US NOT WASTE MATERIALS—

Begin at home. The larger portion of salaries and wages is spent on the home—food, fuel, light, clothing. Are any of these things being wasted? $20.00 a year saved from waste in every home in Canada will more than pay the interest on a war debt of $500,000,000.

LET US SPEND OUR MONEY WISELY—

Are you spending your money to the best advantage? What do you think of extravagance in war time? Tens of thousands of Canadians are daily risking their lives for us at home. Is it not our duty to be careful and economical? Canadian dollars are an important part of the war equipment. Make them tell. Have a War Savings Account. Buy a War Bond.

THE GOVERNMENT OF CANADA 3

THE DEPARTMENT OF AGRICULTURE **THE DEPARTMENT OF FINANCE**

Ottawa.

The Imperial Motor Company, 150 Albert Street, propose to erect an addition to their premises.

Owen Sound.

The plant of the Union Cement Company, who are working on a $50,000 barrel contract for the City of Toronto, recently sustained damage by fire. Reconstruction is proceeding at once.

Paris.

*Penmans, Limited, are at present making an extension to their No. 1 mill here. The addition will be about 50 x 60 feet in dimension and two floors in height.

Peterboro.

The Quaker Oats Company are planning to erect a $50,000 brick addition to their premises here.

Petrolea.

The Lambton Flax Company proposes to build factories in Sarnia, Petrolea and Alvinston, and have its head offices in Petrolea. The company asks a free site at the east end of the Wyoming Road, Petrolea, and a fixed taxation, and is prepared to build a $10,000 factory.

Port Hope.

Helm's Foundry, which has been closed here for a good many years, is being reopened by a new company called the Port Hope Machine & File Works, which will conduct a gen-

For quality and service on

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WALKERVILLE HDW. CO. Walkerville
NORTHERN CAN. SUP. CO. Cobalt

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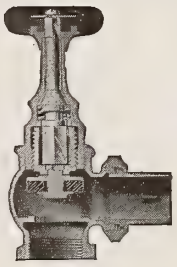
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We are making it a point in our business policy to take care of all our customers requiring standard lines we manufacture, and although we are in a position to do this fairly satisfactorily, would ask customers to specify as far ahead of their actual needs as it is convenient for them to do, and we will do our part.

TWIST DRILLS, MILLED SCREWS NUTS, ETC.



Patented 1909



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Valve Manufacturers ∴ WALKERVILLE, ONT

—GOOD FILES
Promote Efficiency

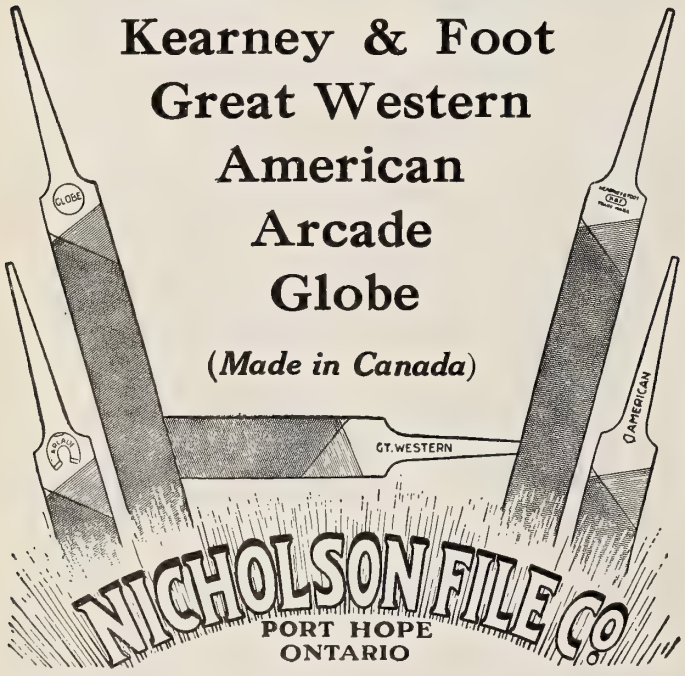
You cannot get away from the fact that when a man is working with a good tool his pride in his work increases. A file worn smooth irritates the most even-tempered workman, while the high-strung, skilled mechanic who works with a bad file for half an hour costs his employer more in wasted mental and physical energy than possibly a dozen files may cost him—in the final results.

Educate your men to throw away their files when they reach their "inefficient point." It is economy. It is efficiency. It promotes good temper at the bench.

—the Famous Five are:

Kearney & Foot
Great Western
American
Arcade
Globe

(Made in Canada)



eral engineering business. Special machinery is being installed for re-cutting files, which will be the principal branch of the business.

Renfrew.

The Renfrew Machinery Co. are putting up a brick and frame building, costing $8,000.

St. Catharines.

In connection with the factory now in course of erection for the Dominion Food Company, the contract for steel work has been let to the Hamilton Bridge Company, Hamilton.

Simcoe.

The Unique Shoe Company will build a factory here, at an approximate cost of $10,000, if the by-law granting them certain concessions is passed.

Toronto.

The general contract for the erection of a factory for L'Air Liquide Society, 16 Boler Street, has been let. The approximate cost is $3,550.

Work has started on the erection of a factory on Perth Avenue for the Flint Varnish & Color Company. Estimated cost is $150,000.

The Comfort Soap Company are making an addition to their factory on Eastern Avenue, at a cost of about $4,000.

The Gurney Foundry Company will erect an addition to their plant on Junction Road, at a cost of $2,500.

John Whitfield & Company will erect machine shop and pattern storage on Front Street, at a cost of $3,600.



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The compressed nickelled steel ferrules on all

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ONTARIO STREET & PAPINEAU AVENUE

MONTREAL, CANADA

The Brandon Company, 108 Vine Street, have had plans prepared for a machine shop, of steel and brick construction, to cost about $5,000.

The T. Eaton Company, Limited, will build an extension to their factory on Teraulay Street.

*The British American Oil Company, Limited, have just removed from the head office to more commodious quarters in the Royal Bank Building. It is now ten years since the company started business, and the expansion which has rendered necessary the securing of more commodious quarters is most gratifying.

*The management of the Rudd Paper Box Company, Limited, last month, voluntarily advanced the wages of all their factory employees 10 per cent., the increase affecting about 130 hands.

*The International Time Recording Company of Canada, Limited, moved into its new home at William and Anderson Streets, about the middle of April. The company recently took over the interests of the W. A. Wood Company, who manufactured and distributed the Globe Time Recorder. This addition to their business, together with their own rapidly increasing output, made new and more adequate quarters absolutely necessary in order to serve Canadian demands properly. In their new home the International people will have a modern plant in every respect. It will come under the supervision of F. E. Mutton, General Manager of the company, formerly managing director of the Gibbons Advertising Agency of Canada, and prior to that Canadian district manager of the National Cash Register Company. The parent company of the International Time Recording Company of Canada, namely, the International Time Recording Company

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of New York, has made arrangements whereby the Canadian company will take care, to a large extent, of the manufacture of time recorders for the large export trade of the company's foreign representatives.

*William Neilson, Limited, manufacturers of ice cream and chocolates, are putting up a new plant, 45 x 100 feet, three storeys in height, which will be used exclusively in connection with their chocolate business. This branch of their business is growing at such an enormous rate that they are unable in their present building to take care of the manufacture of all the goods that they have on order. The new building will immediately adjoin the present building.

*A. R. Clarke & Company, Limited, have recently called for tenders for the erection of a $30,000 addition to their plant. The enlargement is being made to take care of the increase in their patent leather business. They state that England has developed into a great market for this product, and large shipments are being sent across the Atlantic. Prior to the war the Germans controlled the English market, but the English agents who are handling the Clarke product advise their principals that after the war prejudice against German goods will be so strong that Canadian manufacturers will be sure to maintain a good volume of business.

The York Knitting Mills have been granted a permit to build a five-storey addition to their factory on Queen Street, at a cost of about $70,000.

Walkerville.

The Chalmers Motor Company, of Detroit, Mich., which recently obtained a Canadian charter, with a capitalization of $1,000,000, is to establish its Canadian branch plant here. A deal has been closed for the purchase of the plant of the Tate Electric Company for that purpose.

FIBRE, PAPER LUMBER

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MARK
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Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

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133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Welland.

Ground has been broken for a $10,000 addition to the plant of the Pollard Mfg. Company in Ferguson Street.

*The Volta Mfg. Company which was formed in June, 1915, by R. Turnbull and John Young, of this town, for the manufacture of automatic controls for electric furnaces, electric winches and other apparatus used in electric furnace work, are at present erecting a factory building on a tract of land in the centre of the town. Prior to the formation of the company Mr. Turnbull, who is a consulting engineer, used to import special apparatus connected with electric furnaces from Europe (though not from Germany). After the war started it was found impossible to procure these, and the Volta Mfg. Company was formed on a small scale in order to make them.

QUEBEC.

Bromptonville.

The factory of the Model Dress Company was recently destroyed by fire. The loss was $25,000.

Donnacona.

The Donnacona Pulp & Paper Company has commenced the erection of a new building. The structure, which is to be of concrete and steel and fireproof, one storey high, will be faced in brick and cover an area of 21,250 square feet, 50 feet wide by 425 feet in length, and will be divided into three departments, machine, finishing and batter rooms, with a power-house in the rear. The construction of the buildings will cost about $100,000. The steel work, the most important item in the estimates, will figure between $20,000 and $25,000.

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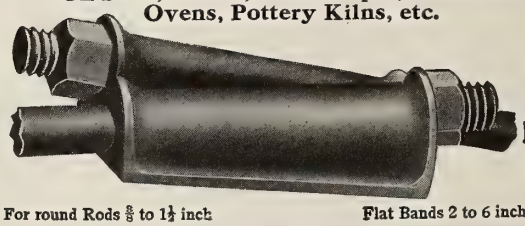
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and show you how to reduce insurance costs 50% to 80%.

IT'S A GREAT BIG MONEY SAVER.

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169 Duke St., MONTREAL, P.Q.

Fassett.

*The factory of the Standard Chemical, Iron & Lumber Company of Canada, Limited, at this place, was last month destroyed by fire, with a loss of $75,000. The company announces that it is going ahead with the reconstruction of the plant, and expects to have the same in operation by the 1st of July.

Grand Mere.

*The Laurentide Company, Limited, are completing a new sulphide digester at their mill here, and expect to have it in operation by June 1st. The new digester will be capable of turning out from thirty to thirty-five tons of sulphide pulp per day.

Hull.

*The Hull Iron & Steel Foundries, Limited, are erecting an addition to their foundry 150 x 90 feet. It will be used for a light weight casting department, and will cost in the neighborhood of $30,000. The company are also completing offices and storerooms which will cost about the same amount.

Joliette.

*The Joliette Steel Company have purchased and are rebuilding and remodelling a steel foundry which was in operation here some few years ago. They intend to make a specialty of commercial castings, and will operate the plant on what is known as a bessemer converter system. It will be ready to start operations this month.

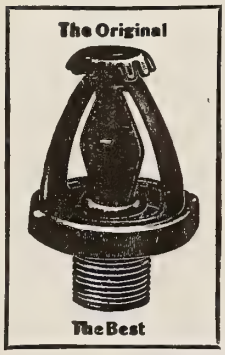
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Canadian Manufacturers
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Manufacturing White and Grey Cottons, Prints, Sheetings, Shirtings, Pillow Cottons, Longcloths, Cambrics, Ducks, Bags, Twills, Drills, Quilts, Bureau Covers, Towels and Towelling, Blankets, Rugs, Twines and many other lines used by Manufacturers in Rubber and other Trades.

Kenogami.

Price Brothers & Company, Limited, 56 St. Peter Street, Quebec, are considering extensions to their lumber mills, to cost about $200,000. Concrete construction is probable.

Montreal.

Tenders will be called shortly for the erection of a factory for L. Wisintainer & Sons, 58 St. Lawrence Boulevard.

The Montreal Locomotive Works, Limited, Longue Pointe, have awarded the general, masonry and carpentry contracts for an emergency hospital. The approximate cost is $7,000. Tenders are being received for the remaining trades.

W. A. Mahoney, Telephone Building, Guelph, Ont., is preparing plans for an addition to the premises of the Canada Stove Company.

*Darling Bros., Limited, manufacturers of pumps and elevators, have under construction an addition to their factory. It is being built of reinforced concrete 30 x 100 feet, four storeys high. The purpose of the addition is to take the place of an adjoining building which the company were occupying temporarily. The whole organization will in future be under one, thus saving a lot of extra handling.

*The name of the Alaska Feather & Down Company, Limited, was changed on April 15th, to the Parkhill Mfg. Company, Limited. The change in name recognizes the long, close association of J. H. Parkhill in the politics of the Alaska Company. It was in 1898 that Mr. Parkhill first became associated with the Alaska Feather & Down Company as secretary-treasurer, having charge of the sales and credit departments. He was elected vice-president in 1902. In

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Washed Cotton Wipers

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OF EVERY DESCRIPTION

1904 he opened a branch for the company in Winnipeg, which in 1908, was incorporated as the Alaska Bedding Company, of which he became president. A year ago Mr. Parkhill became permanently located in Montreal as supervising executive of the Bedding Companies, with which he is associated. J. H. Sherrard, the founder of the Alaska Feather & Down Company, Limited, will retain close relationship with the new company in the capacity of advisory director.

Pointe-aux-Trembles.

The general contract for the construction of an oil plant for the Imperial Oil Company, Limited, Montreal, has been let. The work consists of an underground viaduct reinforced concrete, mechanical and stores building, power-house, boiler-house and transfer pump-house. Structural steel will be supplied by the Structural Steel Company, Limited, Montreal.

Quebec.

The general masonry and carpentry contracts for the erection of a factory on Ste. Helene Street for the Dominion Corset Mfg. Company has been awarded. The construction will be of brick and stone and will cost approximately $50,000.

Quyon.

The Canadian Wood Molybdenite Company, who recently started operations at a mine containing molybdenum, about four miles from here, intended putting up a mill at once to smelt the ore.

Three Rivers.

The contract for structural steel required in an addition to the plant of the Canada Iron Foundries, Limited, has been let to Canadian Bridge Company, Walkerville, Ont.

SASKATCHEWAN.

Regina.

*The Prairie Biscuit & Confectionery Company, Limited, announcement of the incorporation of which was made last month, state that they have not as yet prepared plans for the erection of a building. Until they have sold a certain amount of stock they cannot decide definitely regarding further developments, but prospects were reported to be quite bright.

Saskatoon.

The Chalmers Motor Company will make a large extension to their plant here. The main building will be 400 feet long, 60 feet wide and four storeys high, to cost $510,000. It will have a wing 60 x 50 feet, and with the recently completed service building will add 156,000 square feet of floor space to the plant.

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Everything for the Bath Room.
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Incorporated 1869

Capital Authorized - - -	$25,000,000
Capital Paid Up - - - -	$11,560,000
Reserve & Undivided Profits	$13,236,000
Total Assets - - - - - -	$200,000,000

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NOTICE

The following are the Factory Inspectors for the Province of Ontario:

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H. A. CLARK, Toronto
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
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Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

Hon. JAS. S. DUFF,
Minister of Agriculture.

W. C. McGHIE,
Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID,
Minister of Public Works.

D. M. MEDCALF,
Chief Inspector of Steam Boilers.

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACCOUNTING FORMS
Business Systems, Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BINDERS, loose leaf
Business Systems, Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANK BOOKS
Business Systems, Ltd., Toronto.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
*Canadian H. W. Johns-Manville Co., Toronto.
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, heating
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Boeckh Bros. Co., Toronto.

BRUSHES
*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford. Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited. Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS AND CLOCK MOVEMENTS
The Arthur Pequegnat Clock Co., Berlin, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COFFEE IMPORTERS, Roasters and Manufacturers
C. H. Cochrane & Co., Ottawa, Ont.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLLARS AND CUFFS, waterproof
Williams, Greene & Rome, Berlin, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited. Toronto.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED BOXES
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORRUGATED PAPER
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.
Canadian Wm. A. Rogers, Ltd.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J. L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

ENVELOPES, Transos,
Business Systems, Ltd., Toronto.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*Canadian H. W. Johns-Manville Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
*John W. Peck & Co., Limited, Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
Gurney Foundry Co., Limited, Toronto.
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, house and office
Canada Furniture Mfrs., Limited, Woodstock, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
Gurney Foundry Co., Limited, Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INDEX CARDS
Business Systems, Ltd., Toronto.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Toronto.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Berlin Machine Works, Limited, Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MEATS, canned
The Wm. Davies Co, Ltd., Toronto.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK BOTTLE CAPS
Business Systems, Ltd., Toronto.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A. Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
Williams, Greene & Rome, Berlin, Ont.
Peerless Overall Co., Rock Island, Que.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERWARE
Toronto Silver Plate Co., Limited, Toronto.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
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SPORTING MEDALS AND TROPHIES
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Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

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SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKETS, gray iron and flint rim
*Canadian Link Belt Co., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*Canadian Sirocco Co., Windsor, Ont.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Pedlar People, Ltd., Oshawa, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
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*Henry Hope & Sons, Ltd., Toronto.

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*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
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The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

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STRUCTURAL STEEL
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*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.

SUIT CASES
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Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TAGS, shipping and factory
Business Systems, Ltd., Toronto.

TANKS
Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
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*Canadian Billings & Spencer,, Ltd., Welland.

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*International Time Recording Co. of Canada, Ltd., Toronto.

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*Canadian Morehead Mfg. Co., Woodstock.

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*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

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B. J. Coghlin Co., Ltd., Hamilton, Ont.

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*Richard-Wilcox Canadian Co., Limited, London, Ont.
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The Gurney Scale Co., Hamilton, Ont.
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The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

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Pratt and Whitney Co., of Canada, Dundas, Ont.
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*Otterville Mfg. Co., Ltd., Otterville, Ont.

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Jenkins Bros., Ltd., Montreal, Que.

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Penberthy Injector Co., Ltd., Windsor, Ont.

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*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
*Dougall Varnish Co., Ltd., Montreal.
R. C. Jamieson & Co, Ltd., Montreal, Que.

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*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

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*Canadian Hart Wheels, Ltd., Hamilton, Ont.
WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
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WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
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John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
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Oil Well Supply Co, Ltd., Petrolia, Ont.

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Brandram-Henderson, Ltd., Montreal, Que.
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The Graham Nail Works, Toronto.
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*Metallic Roofing Co., Ltd., Toronto.
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C. H. Johnston & Sons, Ltd., Montreal, Que.
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*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
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The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.
WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
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*Canada Wire & Iron Goods Co., Hamilton.
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Standard Fuel Co., Toronto.
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Barchard & Co., Ltd., Toronto.
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WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
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*H. V. Andrews, Toronto.
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*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.
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*The Steel Compony of Canada. Ltd., Hamilton.
WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.
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ZINC, electrical
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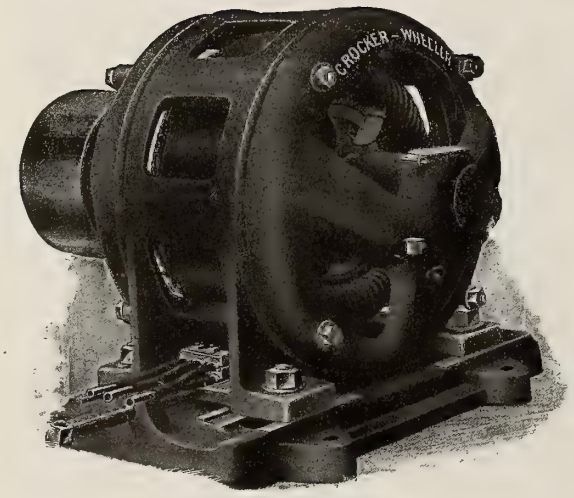
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Excellent Efficiency

They have many other desirable features; Bulletin 155 describes them.

THE CANADIAN CROCKER-WHEELER CO., Limited

MANUFACTURERS AND ELECTRICAL ENGINEERS

Head Office and Works: St. Catharines **District Offices: Montreal, Toronto, Vancouver**

The Advantage of the Small Shop Management

consists in the ability of the manager to keep in close touch with every man in the factory all the time. All other advantages lie with the big organization.

The small shop advantage can be introduced in the big shop by means of a Factory Telephone System.

PRESTO-PHONE

an automatic factory system that does not need a central operator

enables the manager to supervise every department continually. It saves his own and his men's time. It makes for efficiency and larger output.

Are you interested? Write for booklet

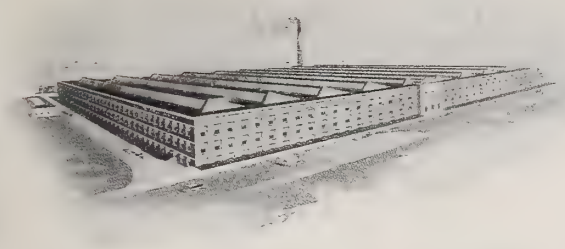
Canadian Independent Telephone Co., Limited

263 Adelaide St. West : : TORONTO



A PRESTO-PHONE DESK SET

The DUNHAM VACUUM HEATING SYSTEM



Rolph & Clark, Ltd., Toronto, using Dunham System of Heating.

Using Dunham Radiator Traps guarantees radiator efficiency because they absolutely get rid of water and air from the radiator.

Dunham Traps are economical because they **do not waste steam** and require but little attention.

It is all a real radiator trap is required to do, but it takes a real trap to do it.

Dunham Traps are giving real service in a great number of Canada's principal plants and buildings to-day.

Radiator efficiency in industrial heating plants means greater efficiency in production and employees.

It is a matter which requires thoughtful attention — whether you will use a Dunham System in your new plant, or whether you should Dunhamize your present heating plant by the application of Dunham Radiator Traps.

WRITE TO-DAY, WE WANT TO GIVE YOU FULL INFORMATION.

C. A. DUNHAM CO., Ltd. - - TORONTO, CAN.

OTTAWA—214 Booth Bldg.
MONTREAL—Room 20, 11 St. Sacrament St.
HALIFAX—Eagar, Coombs & Co., Ltd., McCurdy Bldg.
VANCOUVER—520 Duncan Bldg.
WINNIPEG—405 Tribune Bldg.

ADJUSTABLE TAPS

FOR Shrapnel and H.E. Shells



ON hard, tough shell steel, solid taps are too expensive as the excessive wear quickly puts them below gauge size.

The simple adjustment on the tap, shown in our cut, was gotten out to overcome the effect of this excessive wear and to provide an economical substitute for the expensive chaser tap.

The accuracy to size and form is easily maintained and the life of the tool prolonged far beyond that of a solid tap at a comparatively small advance in price.

We can supply them for all tapping operations on Shrapnel and H.E. shells to 4.5" diameter.

Ask for our list and prices of Shell Tools
Reamers, Taps, Dies, Cutters

If you have not received our No. 8 catalogue yet, we have one for you.

PRATT & WHITNEY CO.
of Canada, Limited
Dundas : Ontario

MONTREAL
723 Drummond Bldg.

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609 Bank of Ottawa Bldg.

LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

THE JOHN BERTRAM & SONS CO. LIMITED

DUNDAS, ONTARIO, CANADA

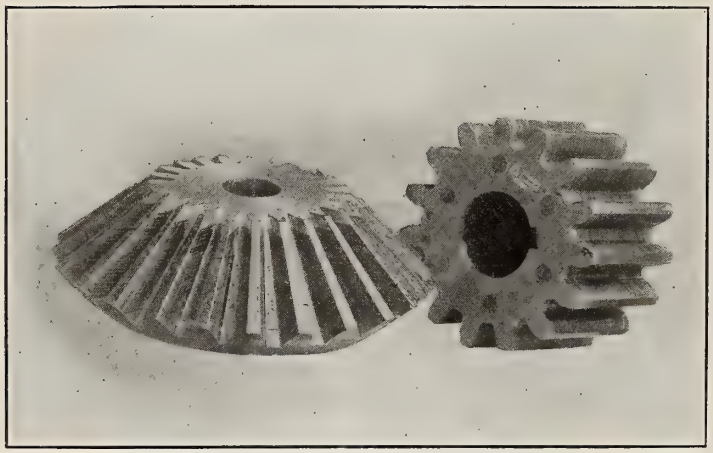
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CUT GEARS

CUT GEARS



Rawhide is suitable for Bevel as well as Spur Pinions.

Rawhide Pinions are silent at high speed and, when well made, are durable.

We carry a good stock of material and can ship promptly.

Hamilton Gear & Machine Co.

COR. CONCORD & VAN HORNE TORONTO

FABRIKOID

DU PONT FABRIKOID REG U S. PAT. OFF

Rayntite top material is sincerely guaranteed for one year's service, but made to last the life of your car.

FABRIKOID Motor Quality, has been adopted as the standard upholstery material for the majority of cars built in 1916, because it is the leather substitute that ranks next to real grain leather and is guaranteed superior to "Coated Splits" and so-called "genuine leather."

FABRIKOID Craftsman Quality, is unequalled in handsomeness and durability save by the best real grain leather. Craftsman Quality is the choice of thousands of purchasers for furniture, theatre seats, street and railway car seats, boat upholstery, etc.

Fabrikoid, Book-Finish, for bookbinding, novelties, traveling accessories, etc., takes precedence over all other leather substitutes for these purposes.

FABRIKOID IS MADE IN CANADA

Du Pont Fabrikoid Company

TORONTO, ONTARIO



Let us systematize your handling problem.

Canadian Mathews Gravity Carrier Co., Ltd.

484 Richmond St. W., Toronto Patented



Get the Output of Six Hand Sanders At the Cost of One

That's what you can do with the Yates Flexible Belt Sander, because it finishes at machine speed so much of the work that, formerly, was sanded by hand. Its versatility opens brand new fields for economic machine sanding. Can be applied to any flat surface, and almost any round or concave surface by hand blocks, cut to fit. Any length of belt giving any degree of flexibility desired can be easily obtained. Quality of finish can be made equal to hand finish in every way.

WITH A YATES FLEXIBLE BELT SANDER

you can banish hand sanding except for corners and other out-of-the-way places. The investment required puts it within reach of even the smallest woodworking plants. It's certainly worth your while, at least, to learn more about it and its possible influence on your margin of profit. Complete information yours for the asking.

The Yates Sander line—the standard by which sanders are measured—includes a sander for every purpose. Our Sander Book describes them. Why not get it now—free?

P. B. Yates Machine Co. Ltd.
HAMILTON, ONT. CANADA

U. S. PLANT, BELOIT, WIS.

Consider Hamilton

IF YOU ARE

Seeking a Location for a New Factory

Looking for a Suitable Place For Your Next Convention

Seeking a Desirable Place of Residence

HAMILTON

A beautiful City in the "Gardens of Ontario" cordially invites you to come and see.

AS A CONVENTION CITY it occupies a splendid geographical location; it has Parks and Playgrounds, providing ample place for recreation and games, excellent facilities for boating on the Bay, boat trips on both Bay and Lake, four Interurban lines to points of interest outside the City and nearby Summer Resorts, pure and an abundant water supply and perfect drainage system, and with the new million dollar hotel adequate accommodation for large crowds.

AS A MANUFACTURING LOCATION it has all the great Railway Lines. Remarkably Cheap Electricity. Full benefit of being on the Great Lakes. Natural Gas.

There is a reason for Hamilton's 50 American Industries in addition to 350 Canadian ones.

For detailed information along any line write

COMMISSIONER OF INDUSTRIES

City Hall, Hamilton, Canada

DUNLOP

PACKING
BELTING
HOSE

Hose, Belting, Packing, are the Big Three in what is known as the "Mechanical End" of the rubber business.

It is a far cry from our first efforts in these lines—after being the founders of the pneumatic tire industry in Canada—to the present time when hundreds of feet of floor space are given over exclusively to the manufacture of Packing, Belting, Hose; and scores of artizans specialize on suchlike products exclusively.

You can obtain some idea of how we have grown, not only as tire makers, but as manufacturers of Hose, Belting, Packing, etc., by reading this statement:—

"The factory additions for 1912 were alone nearly as great as the entire floor area of seven years previous; and in 1915 the additions were just double those of 1912."

Would you like a sample of any one or more of the Dunlop "Big Three"?

Dunlop Tire & Rubber Goods Co., Limited

Head Office and Factories: Toronto

Branches in the Leading Cities

M. 21

SEAL OF QUALITY



Just What Every-one Wants

To completely realize that ideal which the public has yearned for—which producers have long striven to attain—

That was the definite purpose behind the $850 Overland.

A small car with comfortable, roomy seats that would ride as easily as a big one—

A small car with "big looks" that a man could buy and yet keep on speaking terms with both his pride and his pocketbook—

A small, light car that would reach a new low level of operating and upkeep expense—

That has been the ideal.

That was the definite need which the $850 Overland supplies with definite finality.

You must see this car to appreciate its beauty.

You must ride in it to appreciate its comfort.

See the Overland dealer at once.

Catalogue on request. Please address Dept 687

Willys-Overland, Limited

Head Office and Works, West Toronto, Ont.

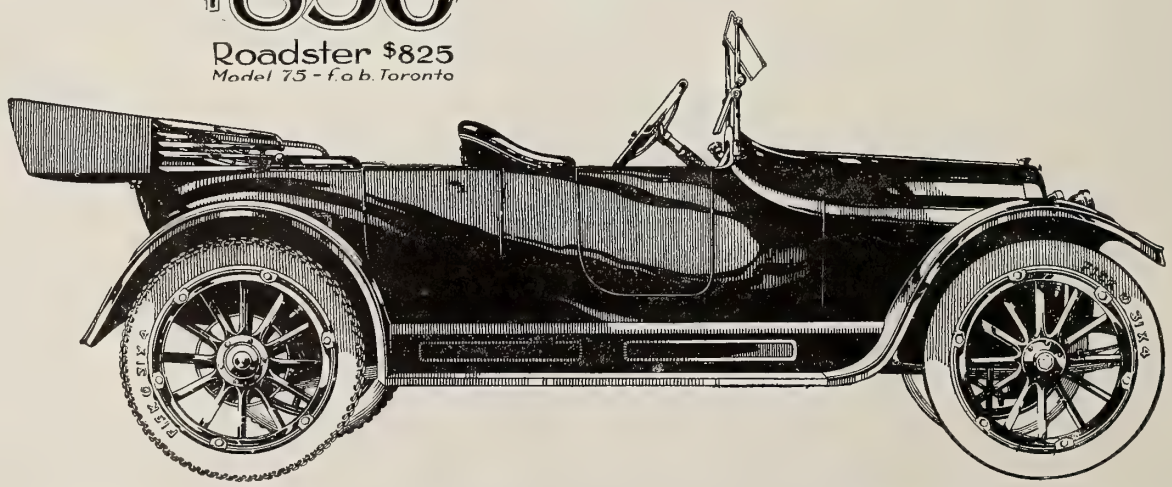
Overland

TRADE MARK REG.

$850

Roadster $825

Model 75 - f.o.b. Toronto



1,000 Cars a Day

Not Enough

A luxurious small car—like most ideals—was difficult of attainment.

And to attain it and still keep the price lower than any other complete automobile had ever been sold for, meant quantity production on a scale never before attempted in cars of this class.

We increased our capacity to 1000 cars a day—more than double any previous output of cars of this class.

And the result is this comfortable small car, beautiful and complete, for $850.

Never before has any complete automobile been sold at anywhere near so low a price.

And never before has any small, light, economical car been anywhere near so comfortable or so beautiful.

But so completely have we realized a popular ideal that 1,000 cars a day is not going to supply the demand.

If you order yours today, it will not be a day too soon to avoid delay.

See the Overland dealer at once.

Catalogue on request. Please address Dept. 687

Willys-Overland, Limited

Head Office and Works, West Toronto, Ont.

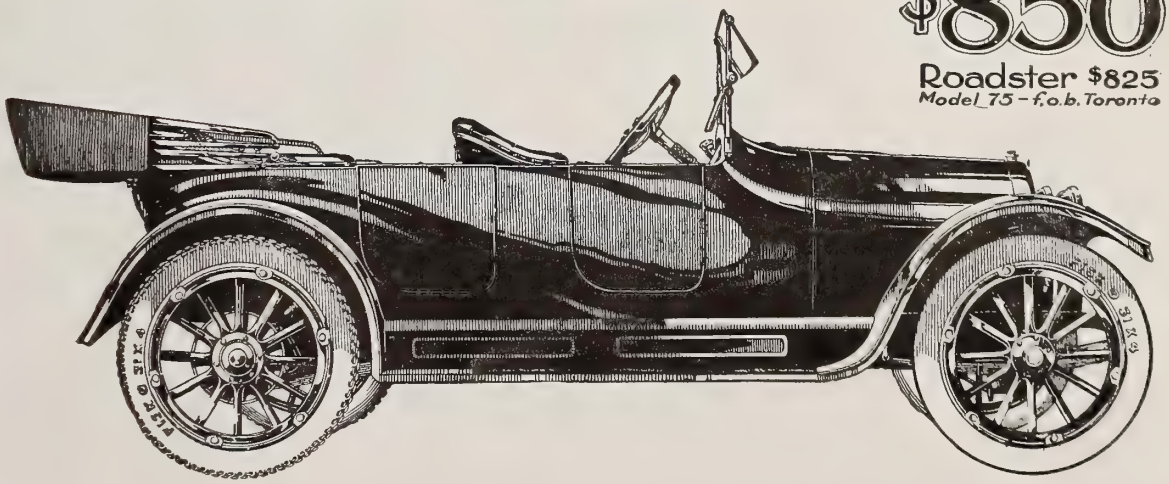
Overland

TRADE MARK REG.

$850

Roadster $825

Model 75 - f.o.b. Toronto



NATIONAL

NATIONAL SERVICE

THERE are three parties to be satisfied when a NATIONAL Truck is sold—

The Owner
The Driver
and the Company

The Owner must be satisfied that the Truck will do the work for which he bought it every day the year 'round.

The Driver must be satisfied that the Truck will keep going, over smooth pavements or rutty roads. He wants to know all about the engine, the transmission, the axles, and bearings.

The Company is always interested in the Truck. To give the Truck owner the most efficient service possible, service stations have been established in every city and town where NATIONAL Trucks are in use.

These Service Stations inspect and make minor adjustments free of charge. Owners are expected to send the Trucks to be inspected at least twice each month.

All this service ***and more*** free of charge.

Address Truck Dept. for full particulars and catalogue.

NATIONAL STEEL CAR CO., Limited

Operating Offices and Works : HAMILTON, CANADA
Montreal Office : SHAUGHNESSY BUILDING



$1,724,000 for New Buildings in Canada Since the War Began

WHY?



Toronto Branch
Area 133,000 sq. ft. Cost $328,000



Montreal Branch
Area 124,000 sq. ft. Cost $333,000



Winnipeg Branch
Area 123,000 sq. ft. Cost $250,000



London, Ont. Branch
Area 49,872 sq. ft. Cost $161,000

Is Canada prosperous?

Are we justified in having the courage and confidence to put on full speed ahead in our business activities?

The experience of the Canadian Ford Company since that never-to-be-forgotten Aug. 1, 1914, indicates that courage and confidence should be away above par, that we are fully justified in casting aside anxiety and putting our full energy into an aggressive and progressive business policy.

It was some time before the outbreak of war that the Ford Canadian Company decided on an extremely broad policy of expansion.

If the demand for Ford cars should increase in the way that it had every indication of doing, then new buildings would have to be started at once to enable the company to meet this demand.

When war came the Ford Canadian executives saw no reason to change their plans—their confidence in Canada's prosperity never wavered.

So work was begun on a new building at Ford City costing $452,000. This is used as an addition to the office building and to the main factory building. It adds 130,000 square feet of floor space to the Ford Plant, bringing the total up to more than 9 acres.

Then followed a new machine shop costing $90,000.

The power plant was also enlarged at a cost of $110,000.

In four leading Canadian cities, handsome new buildings were erected as branch assembly plants, sales and service stations. Each one is as large as many automobile factories. All are of similar construction, being modern fire-proof buildings of brick and reinforced concrete trimmed with mat glazed terra cotta. The bases are of granite. The interiors are finished and fitted in accordance with the very best modern practice.

One of the branch buildings is located at Montreal, 119-139 Laurier Ave., East. It is a four story building containing 124,000 square feet of floor space and costing $333,000. Over 100 people are employed here.

The Ford branch at Toronto, 672-682 Dupont St., is a five-story building containing 132,000 square feet of floor space. The number of employes is about 150.

The third new branch building is at London, Ontario at 680-690 Waterloo Street. It is a three story structure having 49,872 square feet of floor space and was erected at a cost of $161,000.

The immensely increasing demand for Ford cars in Western Canada made it necessary to build a fourth new branch at Winnipeg. This is a handsome five story building located at the corner of Portage Avenue and Wall Street. A quarter of a million dollars was put into its construction.

The total cost of these new buildings erected by the Ford Canadian Company since war began is $1,724,000 Additional to this are thousands of dollars spent to equip these buildings.

Why has this been done?

First, to provide Ford owners with greater service facilities. Each of these branches is so completely equipped with parts and machinery as to be able to build a Ford car complete. Also they act as a base for the hundreds of Ford dealers in their part of the country, each of whose place of business is a well equipped Ford service station, in giving more rapid and more efficient service to Ford owners.

The second reason for this great amount of development work is to be found in the attitude of the Ford Canadian executives. If these men had followed the policy of many Canadian manufacturers they, with seeming good judgment, might have held up these plans for such enormously expensive construction work.

But such was not their attitude. They were convinced that progress and prosperity were assured in Canada.

This decision was of vast benefit to Canadian industries, Canadian merchants and Canadian workmen in such a critical time as this. Practically all the material for these buildings was purchased in Canada. Canadian workmen were employed in their construction. And after the construction work was over, the whole community benefitted from the enthusiastic, successful, wealth producing and distributing activities of these big establishments.

Ford Motor Company of Canada, Limited, Ford, Ontario

Ford Runabout - - - $480
Ford Touring - - - - 530
Ford Coupelet - - - - 730
Ford Sedan - - - - - 890
Ford Town Car - - - 780
f. o. b. Ford, Ontario

Ford
THE UNIVERSAL CAR

All cars completely equipped, including electric headlights. Equipment does not include speedometer.

S-E

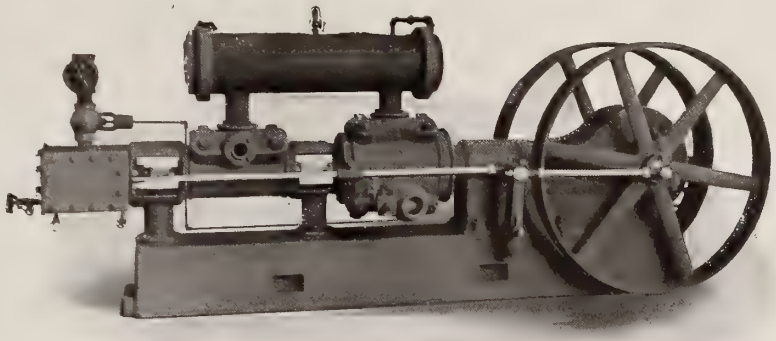


THE NATIONAL-ACME
Manufacturing Company

MAKERS of Special Screw Machine Products from bar stock. Also Standard Screws, Nuts, Studs and Hexagon Brass Nuts at

MONTREAL, P.Q.
De Courcelles & G.T.R., St. Henri





Cheap Air Compressors

cannot give you cheap Compressed Air, because they cannot be made from material and of design and construction which will result in low operating cost. First cost may be low, but upkeep and repairs will soon eat away profits.

Ingersoll-Rand Compressors will give

Cheap Compressed Air

because only the highest class of materials enter into their construction, and their design is the result of years of study by experts in this particular line.

Consult us on your Compressor Problems.

CANADIAN INGERSOLL-RAND CO., Limited

COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Works : SHERBROOKE, QUE.

Sydney Montreal Toronto Cobalt Timmins Winnipeg Nelson Vancouver

Brass Castings

Also Bronze, Copper and Aluminum

GOOD DELIVERIES
REASONABLE PRICES

Send Samples or Blue Prints to

KINZINGER BRUCE & CO.
LIMITED
NIAGARA FALLS, ONT.

Brass, Phosphor Bronze, Copper and Aluminum Castings

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

Write For Prices

Tallman's Reputation is in the Goods

Tallman Brass & Metal Co.
HAMILTON, ONT.

MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ONTARIO

DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited
Welland, Ontario

NOW MADE IN CANADA **"STELLITE"** CONTAINS NO STEEL

The Metal Par Excellence for Cutting Steel and Cast Iron at High Speeds

The Advantage of the Stellite tool is twofold. First, it will do from 20 to 100 per cent. more work in a given time than a steel tool of the same dimensions, working under the same conditions. It takes bigger cuts at a higher speed than any tool steel; second, it does not require so much grinding, and thus utilizes the time of the operator at the machine instead of at the emery wheel.

The Reason the Stellite tool cuts so much faster than steel is because the Stellite tool is able to cut continuously at a much higher temperature than any steel tool; it will not burn, and the temper stays in the tool. Sometimes the speed of a lathe becomes so great that the edge of the Stellite tool will become visibly red, and remain so during an entire cut without the slightest injury.

Stellite is to the best high-speed steel what high-speed steel is to ordinary steel.
Costs more at the beginning, but is by far the cheapest and most profitable in the end.

MADE IN CANADA BY

Deloro Mining & Reduction Co., Limited

DELORO, ONTARIO C.P.R. BUILDING, TORONTO, ONTARIO

Sold exclusively in Canada and Newfoundland by THE CANADIAN B. K. MORTON COMPANY, LIMITED
49 Common Street, MONTREAL, P.Q. 86 Richmond St. East, TORONTO, ONT. Full particulars and price on request.



MADE IN CANADA

Canadian Hart Wheels

CUT FASTER LAST LONGER
Than any other wheels on the market

Tell us the service you want performed and we will supply you with an abraser that will save you time, money and worry.

Send for one of our catalogues and tell us your troubles. We do the rest. :: :: :: ::

CANADIAN HART WHEELS LIMITED
450 BARTON ST. EAST
Hamilton :: :: :: Ontario

The Canada Metal Co., Limited
Manufacture in Canada

Our Babbitt Metals Give Excellent Service



We are Proud of the Goods We Manufacture

FOR GENERAL MACHINERY BEARINGS
TRY
Harris Heavy Pressure
THE BABBITT METAL WITHOUT A FAULT
WE HAVE EVERYTHING IN METALS
Ask for Our New Catalogue. Mailed FREE on Request

THE CANADA METAL CO., LIMITED
Head Office and Factory, Toronto Branch Factories, Montreal, Winnipeg

Steel Castings

The point this month is : **QUALITY**

CASTINGS WITH CONSCIENCE

made in Canada for Canadians.

POINT 1 SERVICE

QUALITY sticks with one a long time after "what it cost" has become a dim memory. You only remember a CHEAP price when that price bought something extraordinarily fine for the sum expended. Castings of parts that go into a product where a flaw means danger — or a loss of business prestige—should be carefully selected. Joliette Castings will be found clean, free from flaws, filling specifications to the letter—and delivered with all possible dispatch at moderate prices. May we quote?

JOLIETTE STEEL

POINT 2 QUALITY

POINT 3—NEXT MONTH

POINT 3 ?

Joliette Steel Company, Limited

Works : JOLIETTE, QUE. Office : READ BLDG., MONTREAL, QUE.
TELEPHONE : MAIN 402

STEEL CASTINGS

From MALLEABLE STEEL, MANGANESE STEEL, CROME STEEL, Etc.

STEEL PROPELLER WHEELS
TURBINE WATER WHEELS, MILL GEARING, Etc.

THE WILLIAM KENNEDY & SONS, LIMITED
OWEN SOUND - - ONT.

STEEL CASTINGS

Manganese, Chrome, and Nickel Steel Castings from ¼ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears any size up to 18 feet in diameter without the use of patterns

Hull Iron & Steel Foundries, Ltd.

Head Office and Works = = HULL, P.Q.

Toronto Sales Office
205 Yonge Street

Acid Open Hearth Steel Castings
for all purposes

Dominion Steel Foundry Company, Limited

Annual Capacity 15,000 Tons

Hamilton, Ontario

ELECTRIC STEEL CASTINGS

WE CAN SUPPLY

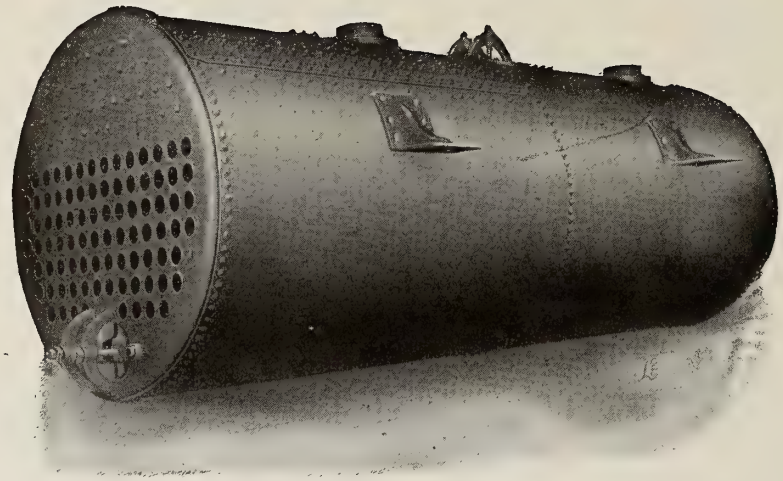
Carbon Manganese, Alloy, Steel Castings Forging Ingots, Etc.

Write for prices and particulars

The Electric Steel and Metals Company, Limited

WELLAND, ONTARIO

BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

ENGINEERS AND BOILERMAKERS

14 Strachan Avenue Toronto, Canada

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers

Transmission Machinery



PLANT OF THE DODGE MANUFACTURING CO., Limited, TORONTO, CAN.

The Dodge Works are the largest in the Dominion exclusively devoted to the manufacture of Power Transmission Machinery. For thirty years we have served Canada's principal factories, having sold during that time more than two million Dodge Wood-Split Pulleys, as well as thousands of complete Shafting and Hanger equipments.

What Dodge Service Means to the Power User
and to You who Buy Transmission Equipment for that Power

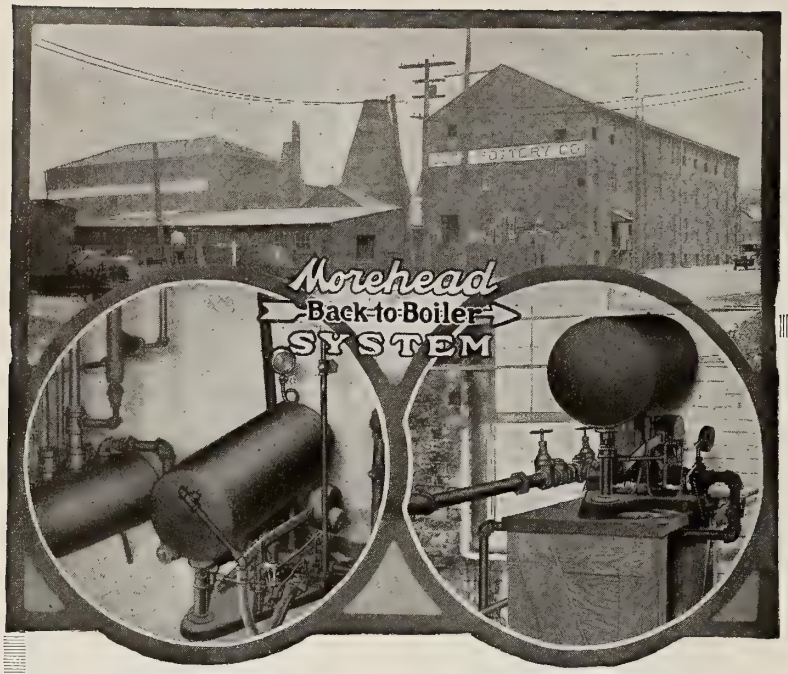
IT MEANS that you have at your command the output of the *largest works* in the *Dominion of Canada* exclusively devoted to the manufacture of Power Transmission Machinery.

IT MEANS that you are able to draw from the *largest stocks* at Toronto and Montreal, and at distributing centres from coast to coast.

IT MEANS that Dodge Machinery is a *complete standardized line*, all parts interchangeable, and you are able to get deliveries at a moment's notice.

THIRTY YEARS of engineering and practical experience combined with the largest and most modern manufacturing facilities, assures the buyer of DODGE Transmission Machinery of a quality in materials and manufacture that cannot be equalled.

DODGE MANUFACTURING CO., Limited
TORONTO : MONTREAL
CANADA



CONDENSER and RECEIVER
for receiving and discharging condensation to Trap above Boilers

RETURN TRAP ABOVE BOILERS
for feeding the condensation to the Boilers

CANADIAN MOREHEAD MANUFACTURING CO.
WOODSTOCK, Dept. "K" ONTARIO

"—15% Fuel Saving over old style Pump and Receiver System—getting *better heat* for drying purposes"

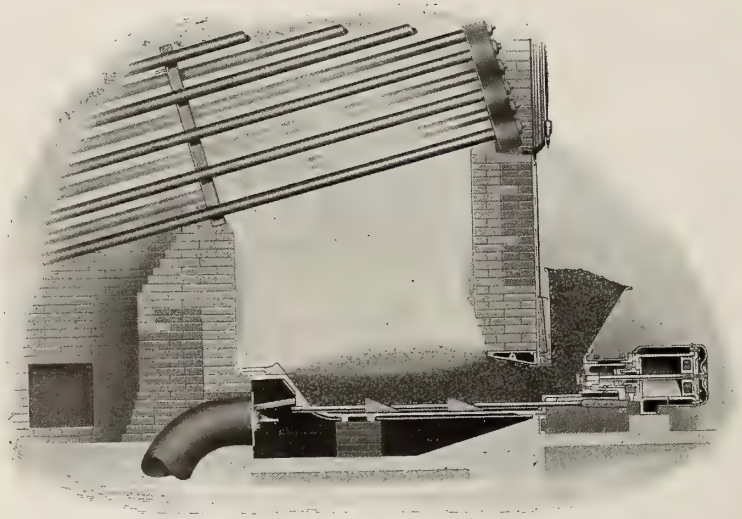
Says the Management of the Cook Pottery Company of Trenton, N.J.

It is the same story told by every user of the

Morehead Back-to-Boiler SYSTEM

More often the reported results are beyond belief considering the simplicity of the "Morehead" System. You can do the same thing or better in your plant. Full information without obligation furnished on request.

The success of the "Morehead" System makes interesting and instructive reading for every progressive, thinking engineer.



Longitudinal section through standard stoker setting under water tube boiler

How Much Has Our Coal Cost During the Year?

After you have figured that out, see what 15 per cent. of the amount is. That is what you are losing if you have not installed a

Jones Underfeed Stoker

MADE-IN-CANADA

IN YOUR BOILER ROOM

Jones Stokers are in use in large plants throughout Canada. They are effecting a fuel saving of from 15 per cent. to 25 per cent.

SIMPLE IN CONSTRUCTION SATISFACTORY IN ACTION

Let us send you a descriptive booklet.

JONES UNDERFEED STOKER COMPANY, Ltd.

NATIONAL TRUST BUILDING, TORONTO

Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

Galt Foundry Co.,
Galt, Ont.

Gentlemen :—

Some months ago we ordered one set of McNaughton Rocking Grates for our No. 1 Boiler. We have been using this continually ever since, and they gave us such good satisfaction, that we followed up the order with two more sets for our No. 2 and No. 3 boilers. We may also add that these are giving entire satisfaction and showing a clean fire at all times.

Yours truly,
(Signature).....

Name of above company on request.



SHOWING SINGLE BAR WITH SECTION REMOVED

A GRATE BAR

that gives universal satisfaction. It is in use in more than one hundred of the biggest plants in Canada.

The McNaughton Rocking Sectional Grate Bar

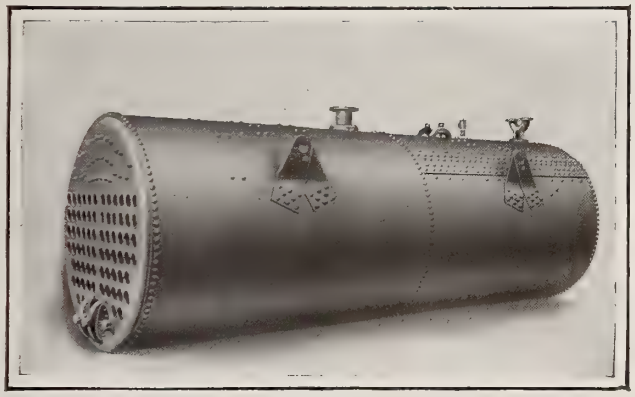
has high efficiency, long life and low repair costs.

Write for Descriptive Leaflet

GALT FOUNDRY CO. - - Galt, Ontario

E. Leonard & Sons, Limited

LONDON - ONTARIO



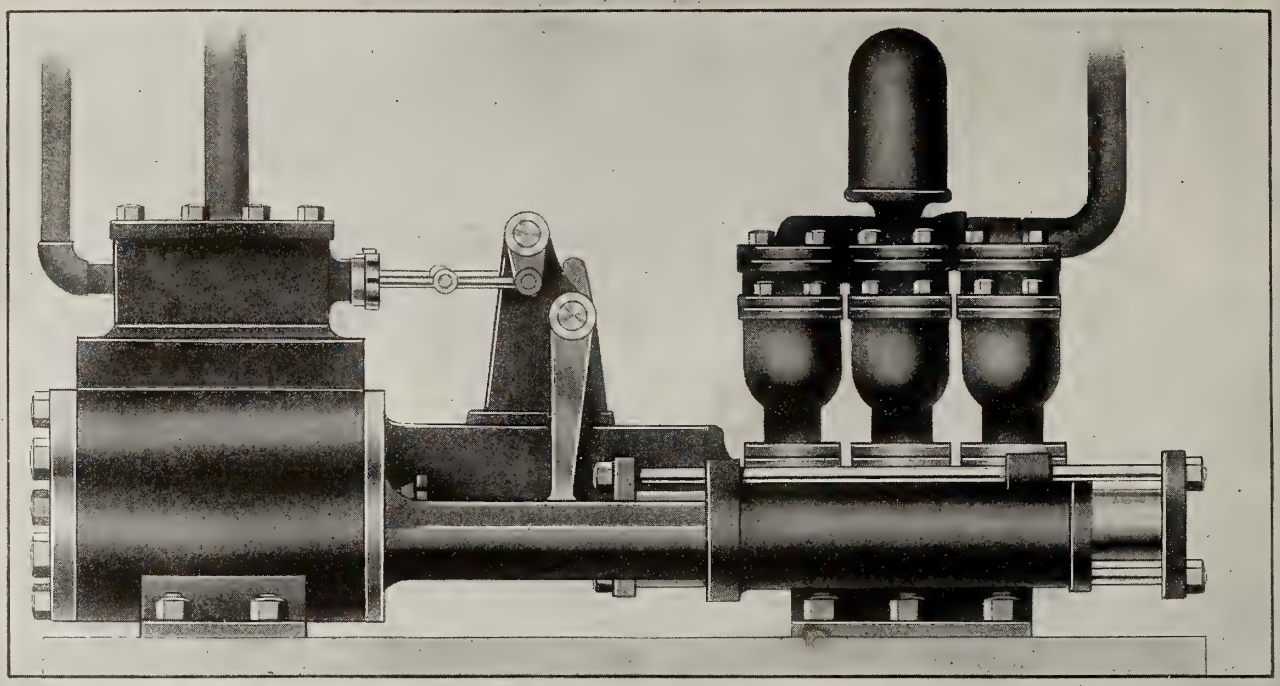
Manufacturers of

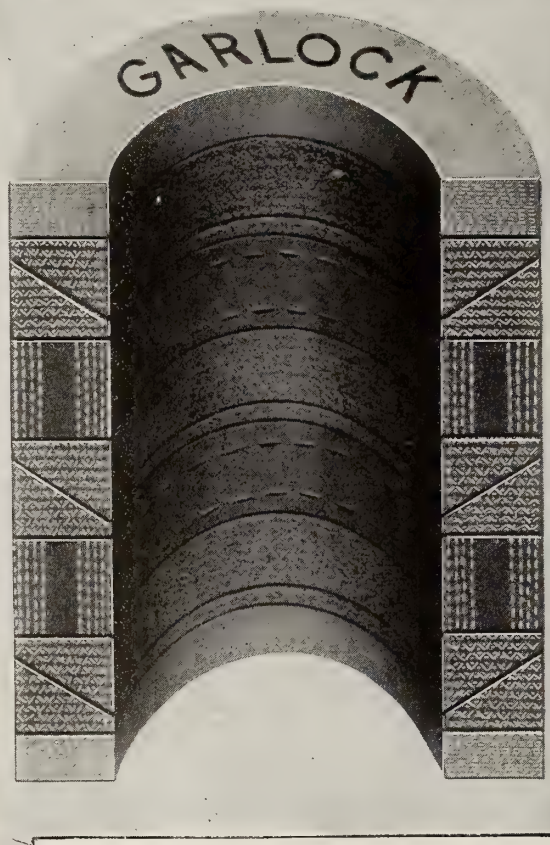
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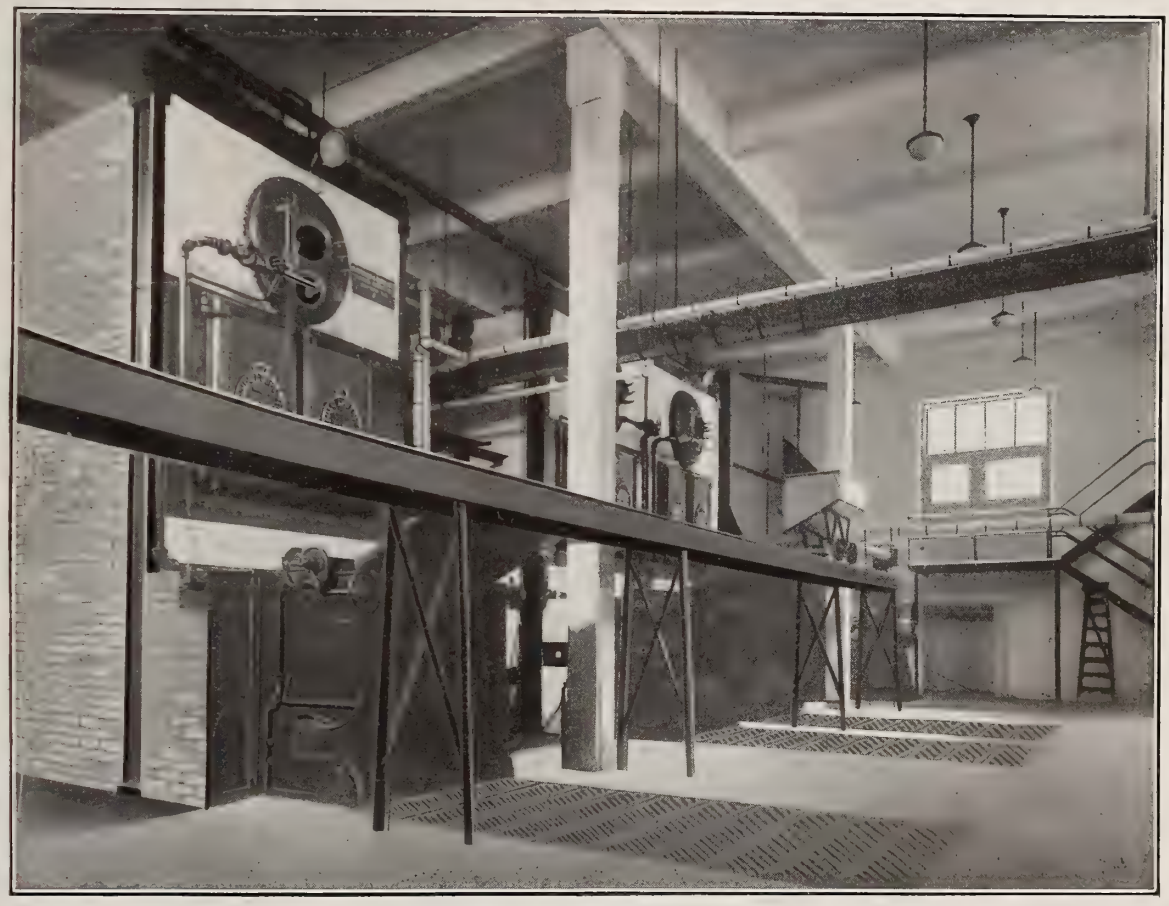
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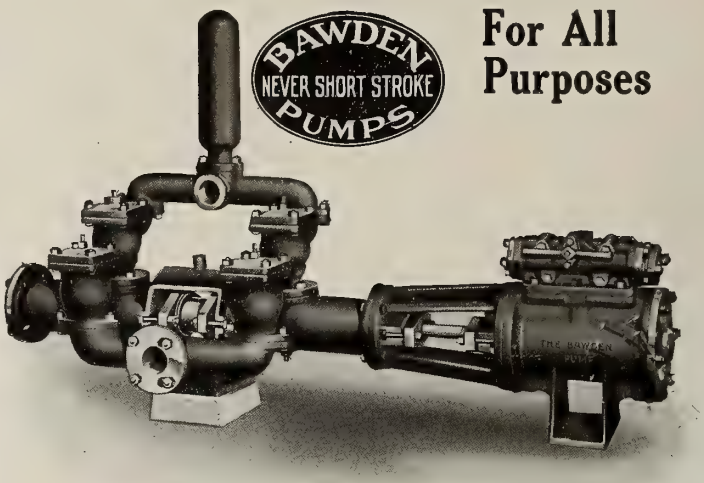
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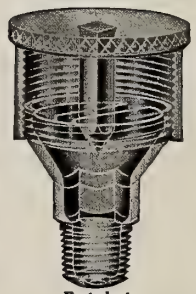
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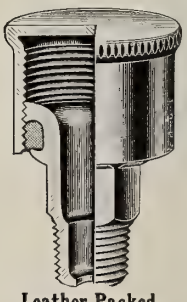


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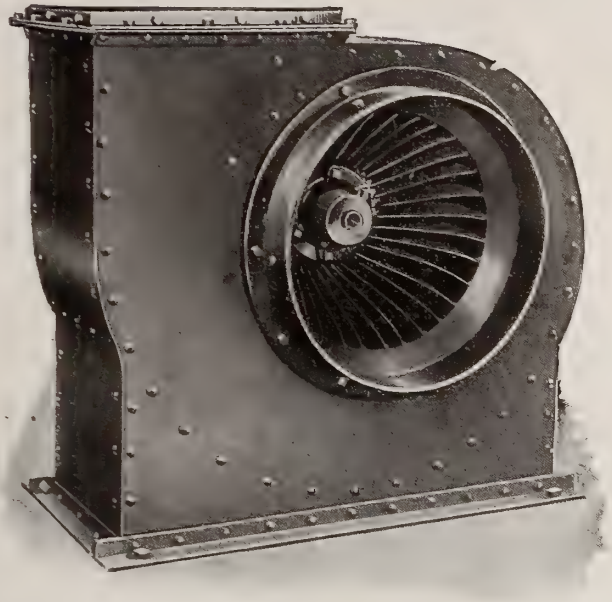
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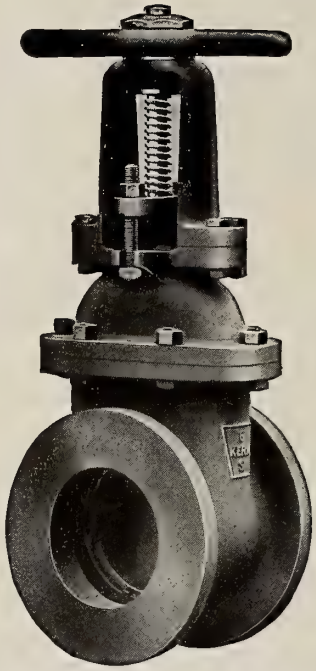
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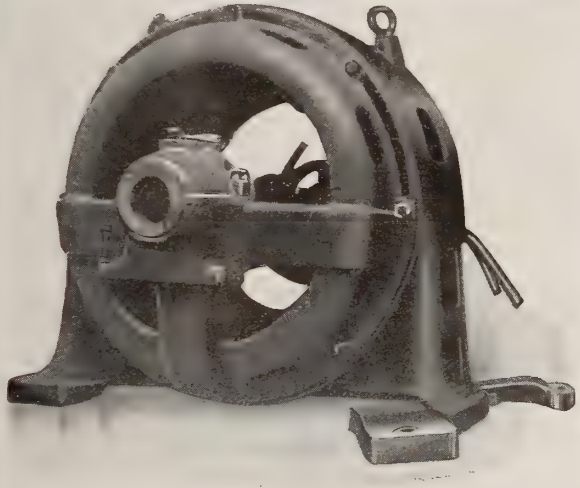
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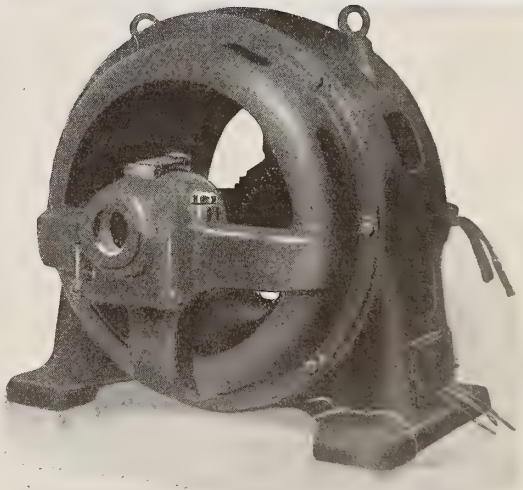
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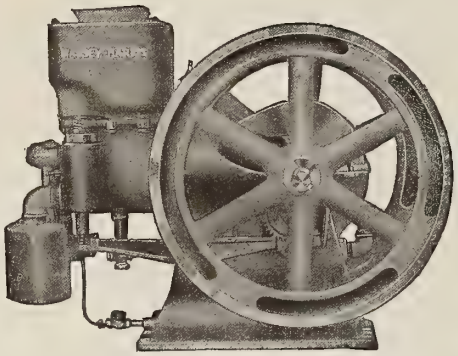
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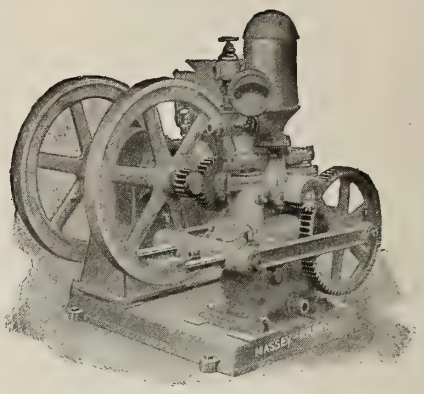
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THE MUELLER LINE



13160
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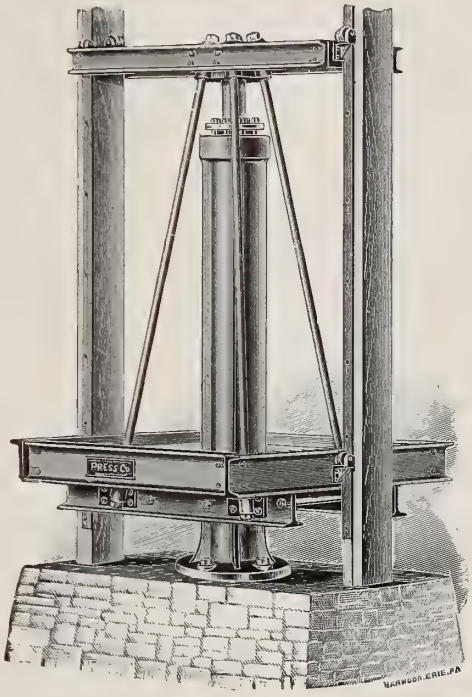
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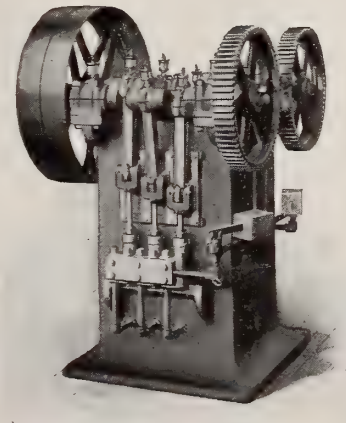
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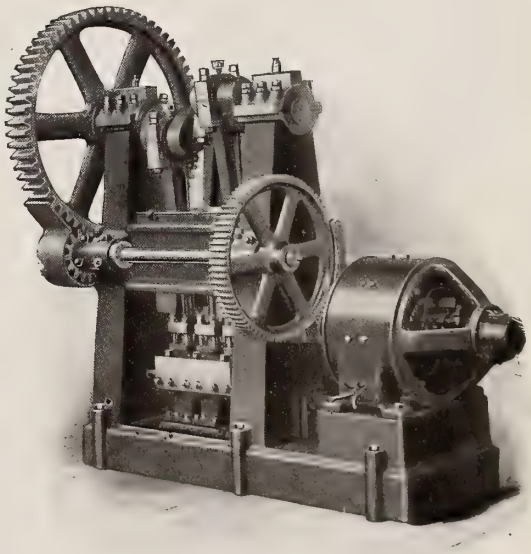


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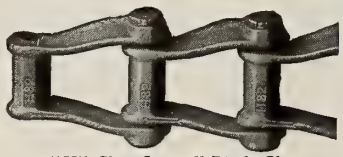
Ewart Detachable Link-Belt

Ewart Detachable Link-Belt

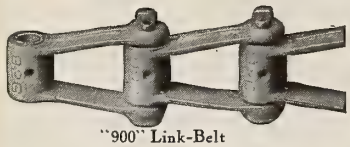
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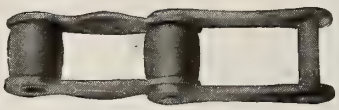
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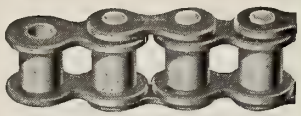
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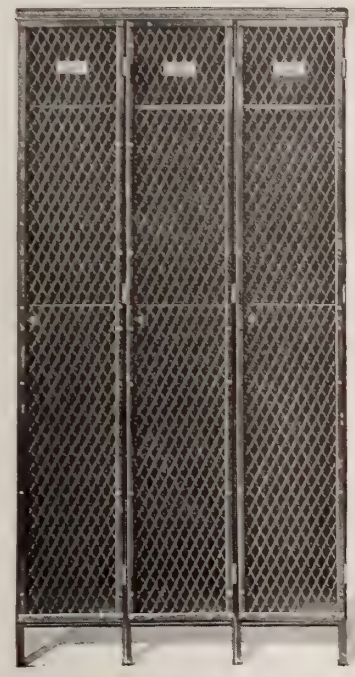
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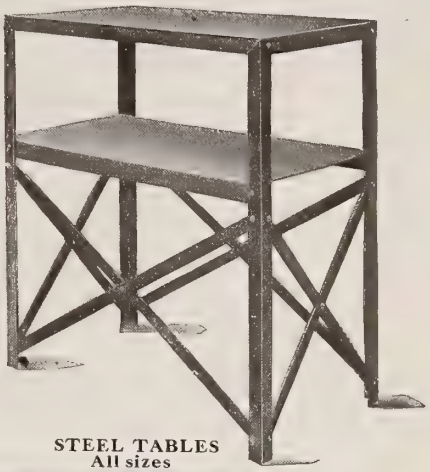
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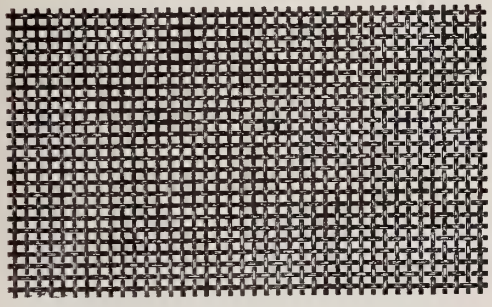
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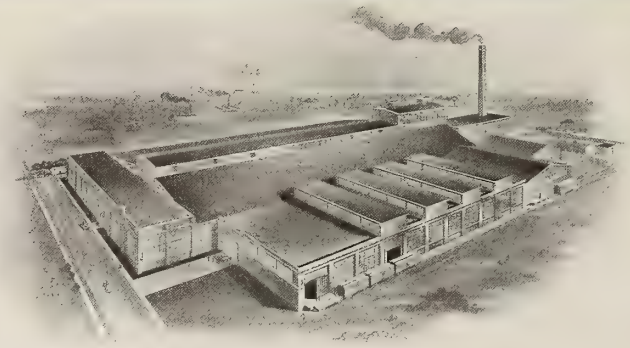
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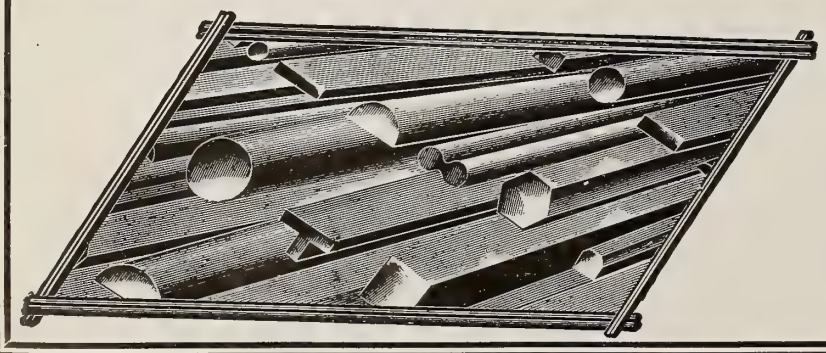
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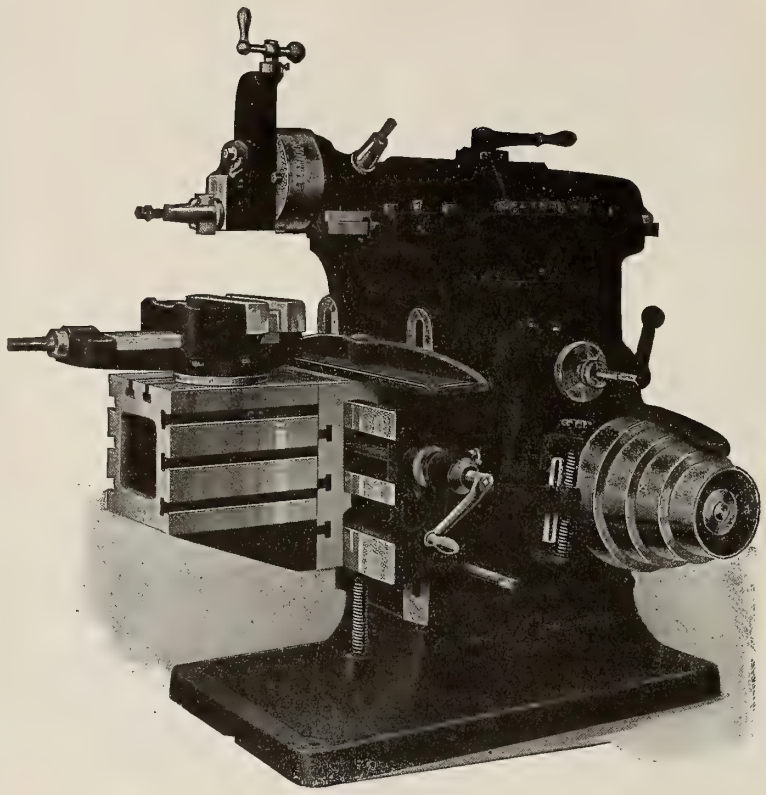
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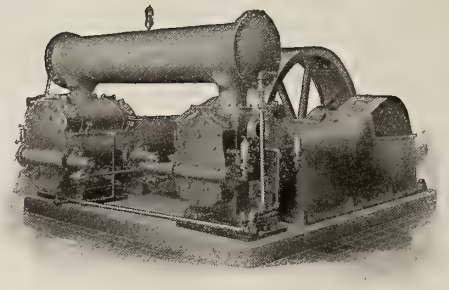
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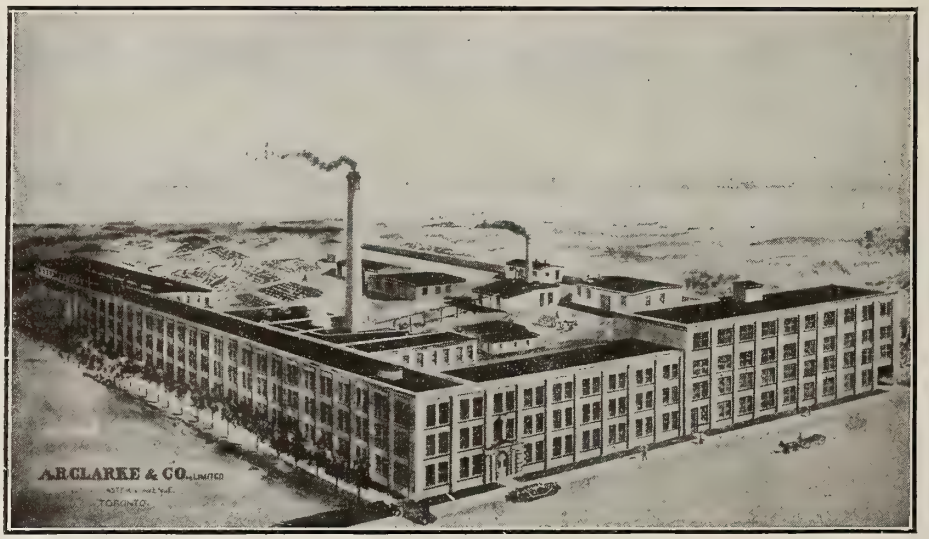
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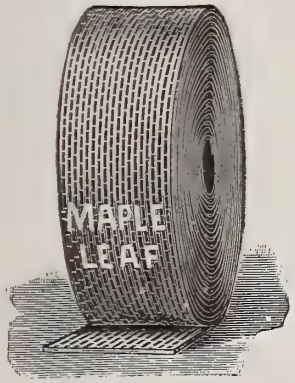
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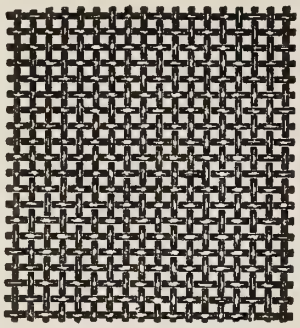
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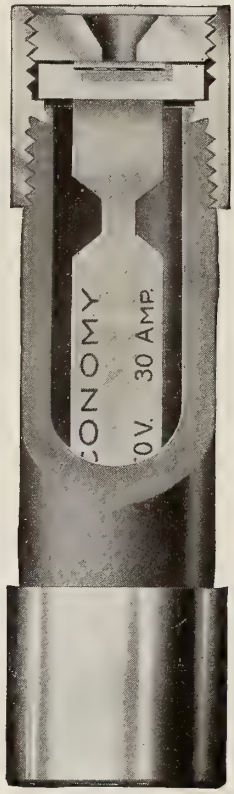
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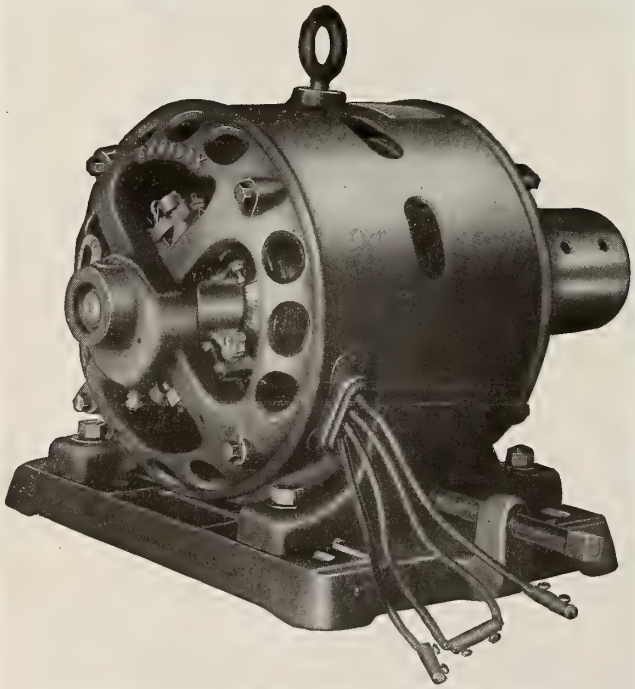
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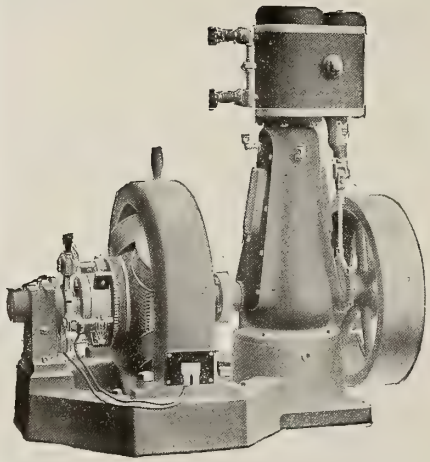


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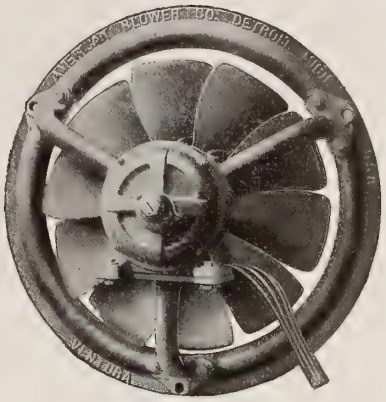
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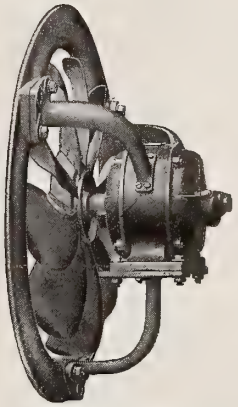
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Westinghouse-Ventura Fans

supply large volumes of air with unobstructed flow.

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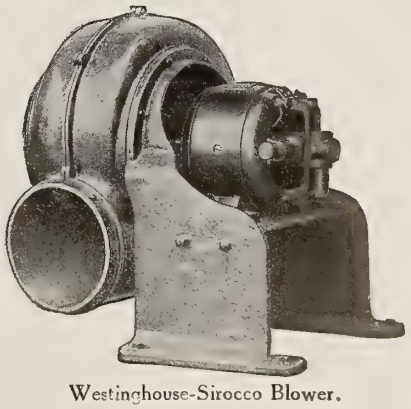
force the air through small and long pipes or against pressure.


Side View of Fan.
Note compact horizontal dimension.

These two types give adequate service under all conditions.

They are easy to install, compact, quiet, clean in operation, and very economical in consumption of current.

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Booklet on request. Address our nearest office.

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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVII. TORONTO, JUNE, 1916 No. 2

INDUSTRIAL CANADA

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The Fuse Contracts Investigation.

OPINIONS may differ as to whether the Meredith-Duff commission of investigation on fuse contracts has as yet brought to light anything very damning or not. Much will obviously depend on the standard of morals with which the thing is measured. Looked at from one angle, it may appear as if nothing really reprehensible had been done; from another, as if the country had been bled unmercifully at the hands of the profiteers. One of these days there will be a finding, and on this aspect of the case it is just as well to keep silence for the time being.

It will hardly be prejudging the case, however, to say that the evidence brought out has unquestionably established the fact that obstacles were thrown in the way of Canadian manufacturers, which were not interposed in the case of certain United States manufacturers. Whether this was done designedly in order to enable Colonel Allison and his friends to consummate their plans, or whether it was simply because the Shell Committee did not believe that Canadian companies were capable of producing the goods, are matters upon which the investigating commission will have to make a pronouncement. Their finding in this respect will doubtless be very interesting, particularly in view of the fact that Canadian manufacturers have disproved the contention that they were incapable of manufacturing fuses successfully.

Prompt Action Demanded.

THE Government would be well advised to hurry up the appointment of its commission to investigate the railway situation in Canada. The country's expenses just now are enormous. What with the increasing burden of the war's costs, the continued expenditure of huge sums on public works, calling for higher and higher interest charges, and the annual hand-outs to impecunious railway corporations, the load is growing very heavy. Anything, therefore, that can be properly done to reduce the sums of money that the nation is being called on to pay out annually should be promptly undertaken.

As the matter stands, railway services are being operated in various part of the country which would seem to be quite unwarranted. The trains are run at a loss, and day by day that loss is being augmented to large figures. So long as the country continues to hand over the money to meet these losses, instead of taking steps to place the operation of the roads on as economic a basis as possible. just so long will the evil be fostered.

The promised commission should be appointed at once, and it should get down to business without delay. Further than that, the Government should insist on as quick work as possible, compatible with thoroughness, and when the report is before it, should lose no time in coming to a decision. Further hand-outs must be avoided, if at all possible.

Where the War Tax Has Gone.

IT is rather disgusting to realize that the amount of money which Canadian business concerns will contribute to the Government this year in the form of the special war tax will be more than absorbed in satisfying the requirements of the two railway companies whose necessities were met by large loans voted during the recent session of Parliament. Of course, the two transactions will not be co-related in that way in the Government's accounting system. The tax money will come in as revenue and

will be expended in meeting charges arising from the war. The loans will be dealt with as capital expenditure, forming no doubt a part of the recent borrowing in New York, which was not to be on war account.

Notwithstanding this difference, it must be apparent to the country that the money obtained by the railway companies was to make good the losses incurred in operating the roads. It was either a case of defaulting on bond interest or getting the money to meet the coupons from the Government. That is to say, two of our business enterprises, after finding that they were in financial straits, made appeal to the people, through the Government, for money to help them out of a hole. Just where the money actually came from is immaterial. It is merely interesting to observe that while the Government was helping out the needy ones with one hand, it was taxing the profits of other business institutions with the other.

One wonders whether there is really any more justification in assisting railway companies with Government loans than there is in aiding any other business enterprises? The principle should be applied impartially or not at all.

The Paper Famine.

CANADIANS have been urged strenuously to save their rags and waste paper, in order that the supply of paper-making materials may be maintained. They have been told that there is a shortage of materials, with a consequent danger of a paper famine. Obviously, with the Government taking steps to prevent the destruction of rags and waste paper and to divert supplies into the paper-making industry, it is a matter of grave importance and one that merits the attention of all good citizens.

There is, however, another side to this question of a probable paper shortage. While we are being urged to save the materials from which paper is made, so that production may be continued, we are apt to overlook the equally valuable means of preventing a paper shortage—a reduction of consumption. Paper has been relatively a very cheap commodity, and it has been used in generous proportions. It is quite possible, by the introduction of many little economies, to save a great deal of this useful article.

Take, for instance, letter-paper. How many firms make use of different sizes of letterheads? It will probably be found that the standard size is being used on all occasions, be the letters long or short. A very considerable economy can be achieved by having a supply of half sizes for use in the case of short communications. These look quite as attractive as the full size and they mean a fifty per cent. saving of paper.

There are other ways of economizing. One large manufacturing company reports that it had a plan to double the size of its house organ, having a circulation of 200,000 copies a month. It decided to suspend the matter for the time being rather than to disturb the paper market further. More than that, it changed its publication from a monthly to a bi-monthly, and eliminated as much circularizing as possible.

Canadian manufacturers, whose bill for paper and stationery is large, can help out by judicious economy. They are urged to look into the matter at once.

Increasing the Efficiency of Railway Equipment.

THE numerous embargoes which the railways found necessary to place against freight traffic during the past six months to avoid blockades have caused serious inconvenience and loss to the shipping public. Many of them were due primarily to the congested condition at the Atlantic seaboard, both in Canada and the United States, arising from the lack of ships to take the traffic away. Others were attributable to local conditions.

There is no doubt room for improvement in the terminals in our large cities and in the methods of handling both carload and less than carload traffic. It has been authoritatively stated that whilst the problem of the line haul has been solved there has been little improvement in the past twenty-five years in the handling of traffic within terminals. These conditions may be attributed in part to the location of the terminals and the inability to expand; also to lack of modern appliances for the handling of less than carload freight. In many of our centres land has become so valuable that it is almost impossible to secure additional space for the purposes mentioned. Whilst this is undoubtedly true, the shipping public can assist in relieving the situation, particularly at the present time, by loading cars where possible to their full capacity. It is, therefore, suggested that instructions be given to that effect. By doing this fewer cars will be required and deliveries improved.

Any improvement in the loading and unloading of freight means better service, and a reduction in the great economic waste now going on as a result of the conditions enumerated. The co-operation of Canadian manufacturers will assist materially in relieving the situation.

The Free Port Agitation.

FOLLOWING the lead of the United States advocates of free ports, there is now being heard in Canada the first sounds of a similar agitation. Mr. Henry Dalby is out with a proposal that a stretch of shore opposite Montreal, extending from St. Lambert to Longueuil, should be set aside by the Government as a free port and that goods should be permitted to pass in or out duty free.

The free port idea originated in Germany, in the case of Hamburg. It was seen how British ports like London, Liverpool and Glasgow had developed an enormous international trade, drawing supplies from one quarter of the globe and reshipping them to another quarter. Germany

wanted to emulate Great Britain, and to do so she made Hamburg a free port, so that goods could pass in or out on terms equal to those enjoyed by the British ports.

Hamburg, as a national seaport, had grown to huge proportions before the war. Its advantages in the way of free trading in all commodities resulted in the establishment of extensive warehouses, important manufacturing plants, and large ship-building yards. The project had national backing, and as a national enterprise was obviously a success.

In the United States it has been proposed to constitute a number of free ports, and the agitation for such a movement has been intermittently strenuous. However, up to the present time the Government has given little encouragement to the idea. There is a suspicion that real estate speculators are behind the scheme in most cases, an assumption that might very well hold good in the Montreal instance, since the proposal there is to work with more or less unsettled land.

It is a little difficult to see just what advantages the country as a whole would derive from having a free port opposite Montreal. In most cases, our manufacturers are getting their raw materials duty free as it is. Were we a great intermediary trading nation like Great Britain it might be different, but we simply import necessary goods and materials from abroad for our own needs, and when we do export, export our own products. However, the scheme is tolerably new here and should not be entirely condemned without careful consideration.

The Latest Shipping Bill in the United States.

CANADIANS are naturally interested in any schemes which their big neighbor may have for remedying the difficulties under which ocean shipping has been laboring since the war started. The Dominion has a serious shipping problem of its own, and at the approaching convention in Hamilton one of the features of the meeting will be an address on the shipbuilding question. Across the border there is a somewhat similar situation, for great lack of tonnage has resulted from the withdrawal of British and German shipping from commerce-carrying.

The third shipping bill of the session is now before Congress. Judging by newspaper comments on its provisions, the administration is no nearer a solution of its difficulty than it was before. Primarily, it establishes a shipping board, consisting of the Secretary of the Navy, the Secretary of Commerce, and five appointed members, who serve for six years at a salary of $10,000. This shipping board is empowered to have constructed in American shipyards, or to acquire by other means, ships suitable for commercial requirements or for use as naval auxiliaries or transports. To achieve this purpose it is authorized to organize one or more corporations with a capital not to exceed $50,000,000 for the purchase, construction, lease, equipment, charter, maintenance, and operation of merchant vessels. Such corporations, it is provided, are to stand dissolved at the expiration of five years from the conclusion of the war. The shipping board further is empowered to exercise supervision over rates for water transportation, to determine and enforce reasonable maximum rates or charges, and to prevent discriminating and unfair practices as prescribed in the bill.

Objection is taken to the bill in some quarters because it seems tolerably certain that investors would not take stock in the project. The whole fifty millions would probably have to be raised by the sale of Panama bonds. It is also pointed out that no new vessels could be obtained for at least two years to come, because all shipyards are now pressed to their fullest capacity to fill the demand from private capital for new ships.

More than that, it is asked whether or not the fleet of Government merchantmen could be sold without heavy loss at the end of the five-year period.

On this side the line the progress of this legislation will be followed with interest.

A Nice Sort of Subscription Business.

A LITTLE incident was brought to our attention recently which goes to show that war time benevolences are not the only objects to which generous manufacturers are contributing a share of their surplus earnings. The pity of it is, however, that some of the objects to which they have contributed are not in the deserving class. One particular instance works out somewhat as follows:

There is an organization existing for perfectly legitimate and laudable purposes called the Firemen's Association of Ontario. This Association holds its annual meeting regularly and transacts important business and forms the means of communication between the volunteer and partly paid fire brigades of the province.

To minimize the inconvenience of publishing the account of its annual activities, the Committee of the Association, for a set lump sum, hands over to a publishing company the right to solicit advertising for the book and to collect the money payable for the advertising.

When the business was brought to our notice, someone was trying to collect a subscription for the Firemen's Association of Ontario. The secretary-treasurer informs us that they have no solicitors and the publisher is empowered only to solicit advertising and payments therefor.

It is quite evident that someone is working a pleasant little game. Who is it? Obviously none of the funds so collected will find their way into the treasury of the Firemen's Association, but more likely into the pockets of some third party. It is surely incumbent on manufacturers and the public generally to see that the game, if pleasant, is at least unprofitable.

Common-Sense Gardianship Wanted.

PUBLIC sentiment in Canada on the question of forest protection and the need of guarding more than five thousand wood-using industries from the menace of forest fires has reached a point which none of our Governments, Provincial or Federal, can safely ignore. Through the efforts of the Canadian Forestry Association and other bodies, the facts regarding Canada's dependence upon cheap and abundant supplies of wood and the enormous damage wrought annually by preventable fires have been made matters of common information in town and country from coast to coast.

The improvement in public intelligence on such questions has been reflected in governmental action in two provinces, Quebec and British Columbia, in a radical advance of the forest protection services. Very sensibly the British Columbia Government recognized its duty in giving protection to the main sources of provincial income, and has succeeded in introducing a modern and energetic forest service which already has greatly diminished the likelihood of a wholesale timber loss in the future. The Quebec Government looked upon its responsibilities in the perpetuation of the timber and timber industries in a spirit no less advanced. As a result, the Quebec Legislature passed at its last session an amendment rendering it unlawful for a settler to undertake to clear his land by the use of fire, without first obtaining a permit to do so from a qualified ranger. This obviates the ever-present risk of settlers' fires being set out on excessively dry or windy days, and also insures that the heaps of slash shall be kept in the centre of the clearing.

Quebec is also awake in its efforts to make incendiarism in forest areas punishable to the same degree as fires in a town or village. Under Quebec laws several scores of prosecutions of settlers who caused forest fires last year were undertaken, and in many cases fines were imposed or the guilty parties imprisoned.

Ontario, however, has not yet seen fit to apply the obviously necessary reforms in its forest protection service which have been so generally accepted by British Columbia and Quebec, although the latter have less to fear from large fire losses in the forest than has Ontario. It is generally agreed that forest protection in Ontario suffers from lack of organization both at headquarters and in the field. The men are, of course, political appointees, but even political appointees may be carefully and intelligently selected. The supervision and inspection of fire rangers is just as necessary as the supervision and inspection of the employees of a locomotive works. Left to themselves, the serious duties of forest protection are not likely to be carried out. This lack of actual service as rendered by Ontario's fire rangers does not mean that the Province is saving money in comparison with other provinces. On the contrary, the lack of supervisors is a costly proceeding; the losses in timber resulting from inefficiency can scarcely be computed. Rangers in British Columbia or in the well-organized sections of the United States have few leisure moments in their daily rounds The opportunities for education of the local residents by the rangers are extensive. They can build trails and lookout towers, and it is their business to construct safe camp-fire places for hunters and fishermen and campers who make use of the areas within their patrol. They can guard the timber against settler's fires by curbing the carelessness of the settler. That Ontario gets more than a fraction of the reasonable amount of service due from its large number of rangers is doubtful.

Settlers' fires have been proved to be one of the worst source of timber loss. Knowing such facts, the Provincial Government has taken no steps thus far to overcome the evil. British Columbia and Quebec have prohibited settlers from carrying on burning operations without the advice and supervision of the ranger, and they must secure from him a special permit. This regulation works no hardship on the settler and is a most valuable protection to standing timber. At present, in Ontario, no matter how conscientious the ranger, the settler may snap his fingers at him.

Sir Clifford Sifton has estimated that at the present rate of cutting and burning, the forests of Ontario could not last more than thirty years. This brings the province face to face with a most grave problem. From no other source than our present standing forests can the two-thousand wood-using industries of Ontario secure their raw materials. Forest fires, indeed, spell gradual extinction for a most important section of the country's industrial life. Having such knowledge, and with no chance of disputing the *responsibility* of the provincial government in the care of the timber, it would seem that this year should see signs of a concession to the demand for a common-sense guardianship.

An Independent Press.

AT the recent meeting of the Canadian Press Association in Toronto an appeal was made both from the ethical and financial standpoint for greater freedom of editorial utterance. It was pointed out clearly by the president in his annual address that heretofore publishers had been relying almost entirely on their advertising patronage for their very existence. The income from advertising was the large item of newspaper revenue, that from subscriptions was small and almost negligible. The inevitable result has been that, whether willingly or not, the press has come to study the moods and humors of the advertiser rather than the interests of the people at large.

A telling analogy was made in the case of hotels. The hotels have been deriving large revenues from the sale of liquor. Their bars have been their most profitable departments, and in consequence have received the bulk of the hotelkeeper's attention. As a matter of fact the bar is merely an appendage to the hotel and not a vital or necessary part of its organism. When it is removed, it was argued, more pains will be taken to make the hotels serve

their basic purpose of providing accommodation for the travelling public.

The newspapers, in much the same way, have been forgetting the primary purpose of serving the needs of the people, in an endeavor to secure the support of advertisers. When the war came, advertising was largely withdrawn and publishers found themselves back at first principles. While it would be foolish to say that they could get along without advertising or make their papers what they should be without the support of advertisers, it is quite within reason to observe that it is possible to be influenced too much by that feature of their business.

Manufacturers have a real interest in seeing that the press of the country is honest and straightforward. The public has got a suspicion, fostered in various ways, that many newspapers and other organs of opinion are merely the mouthpieces of the "interests." In some cases this may be true, but, generally speaking, it is not so. It would be good for the solid business interests of the country if this suspicion could be removed. As matters stand, the public often suspects unjustly. It is convinced that every argument is inspired and that some sinister influence is always at work. If the independence of the press could only be generally established, the clearing up of many misunderstandings would easily follow.

As an example of perverted public opinion, take the idea that is prevalent at present that the price of sugar has been artificially inflated to put huge profits into the pockets of the sugar refiners. The absurdity of this contention is obvious to anyone who has given the problem consideration. Yet the public believes there is something to it and even the strongest arguments in the press sometimes fail to shake belief in its actuality. If newspaper readers were confident that what was written was the independent view of the editor, and not something inserted to please the advertiser, there would be a greater tendency to trust in the judgment of the men who own and publish the newspapers.

TO ENCOURAGE INDUSTRY.

Prince Edward Island has recently organized a Development Commission to inquire into, discuss, and make recommendations regarding matters pertaining to the welfare and development of this Province.

One of its functions is to gather information on various matters and act as an Advisory Board to the Government.

The Commission consists of twenty members representing all sections of the Province.

At a meeting recently held a number of sub-committees were appointed to deal with the following: Agriculture, Education, Fisheries, New Industries, Immigration, Transportation, and Undeveloped Resources.

Under the head of "New Industries" the following branches are being taken up and will be reported on later: Manufacture of glass, the utilization of our seaweeds and our mosses, and the possibilities of toy making on the Island.



Scene in Gore Park, Hamilton

PLANS PREPARED FOR THE HAMILTON CONVENTION

To Take Place on June 13, 14 and 15

CANADA is passing through a period, when conditions of an unusual and complex character prevail throughout all departments of national life. Industrially, problems of great importance have arisen, which call for most careful consideration on the part of all who are concerned with the future well-being of the country. These circumstances lend a special significance to this year's convention of the Canadian Manufacturers' Association, which has been called for June 13, 14 and 15, at Hamilton. It will probably be one of the most momentous gatherings in the history of the organization.

The Programme.

Embodied in the programme, there will be found the presentation of reports and addresses, and the holding of discussions bearing on questions that have a vital interest for all Canadian manufacturers.

The first business session opens at 10.30 a.m. on Tuesday, June 13. The order of business at this session will be,—Secretary's Report; Treasurer's Report; President's Address; Report of Membership Committee; and an address on "The Development of a Canadian Shipbuilding Industry," by Hon. Col. Thomas Cantley.

The second business session at 2.30 p.m., on Tuesday, will receive the report of the Executive Committee; the report of the Legislation Committee; and an address on "Fire Prevention," by Mr. E. P. Heaton, the Ontario Fire Marshall.

The third business session convenes at 10.00 a.m. on Wednesday for the consideration of the reports of the Transportation Committee and the Special Committee on the Co-ordination of Recruiting and Production.

The fourth business session, at 2.15 p.m. on Wednesday, will have before it the report of the Tariff Committee and the report of the Special Committee on Industrial Research.

The fifth and final business session takes place at 10 a.m. on Friday, when there will be presented the report of the special committee on Trade Development, and an address and demonstration of "Business Application of Motography," by Mr. N. A. Howie. This will be followed by the election of officers and the passing of resolutions.



Hamilton's Fine New Hotel, The Royal Connaught, which will be Convention Headquarters

Entertainment.

Social features will not be neglected, and, while in Hamilton, delegates and their wives will be royally entertained by their hosts. At 3 o'clock on Tuesday, the ladies will be taken for a sight-seeing motor drive, while at 8.30, the Hamilton Branch will entertain the guests at a reception at the Royal Connaught Hotel.

Wednesday's events will embrace tea in the afternoon at the Tamahaac Club for the ladies; a theatre party in the evening, also for the ladies; and a smoker for the men at the Country Club, Burlington.

The afternoon of Thursday wil be given over to a boat trip, while the annual banquet of the Association will bring the convention to a close in the evening.

The Place of Meeting.

Situated on Burlington Bay, the finest natural harbor on Lake Ontario, and in the centre of the richest agricultural district of the Dominion, Hamilton is an ideal spot for conventions, offering features of interest to the sight-seer as well as the man of industrial pursuits.

The one essential which has been lacking to fulfil the requirements of a convention city in the past, namely hotel accommodation, has now been provided. With the completion of the Royal Connaught hotel, which was formally opened on June 5th, Hamilton will have from the standpoint of service and equipment one of the finest hotels on the continent.



View Looking East from the Bank of Hamilton Building

THE CONVENTION CITY

Something About the History, Resources and Civic Life of Hamilton, where the C.M.A. Convention Takes Place This Month

HAMILTON, where the manufacturers of Canada gather in annual convention this month, is one of the foremost industrial cities in the Dominion. No other city is so peculiarly devoted to the task of industrial production; no other city can so appropriately be described as the Canadian Birmingham. Its factories are predominant in the group of civic activities, and while other interests—educational, social and æsthetic—have not been neglected, it is from its industries that the busy city at the head of Burlington Bay derives its chief importance.

It may interest those who will be sojourners for a few days in Hamilton to learn something of the city's history and to familiarize themselves with what has been accomplished in the way of commercial, industrial and social development by its citizens.

The Beginnings of Hamilton.

The first white settler to leave any record in the community was Robert Land, who may safely be styled as the pioneer of Hamilton. When the United States proclaimed their independence, there was an influx into Canada of settlers who wished to preserve their allegiance to the Motherland and desired to live upon British soil. In the vanguard of these refugees was Robert Land. He chose the head of Lake Ontario for his new home and built a log cabin at a point now known as the corner of Barton and Leeming streets. His farm consited of 300 acres in the territory now bounded by the shores of the Bay on the north, Welington street on the west, Main street on the south and Wentworth street on the east. The next settler whose name is perpetuated in the history of the locality was Richard Beasley, and gradually other hardy yeomen took up farms in the vicinity until the first survey of the district, made in 1791 by one Augustus Jones, a then deputy provincial land surveyor, showed that there were thirty-one families settled here.

In 1812 when war broke out between Great Britain and the United States, there moved here from Niagara-on-the-Lake with his wife and child, one George Hamilton, a son of the Hon. Robert Hamilton. He purchased from one of the earlier settlers named Durand, a tract of farm property bounded on two sides by the mountain and King Street, and by James Street and Wellington Street on the others. Here he settled down and built his house on the exact spot where now stands the residence of Samuel Barker on Arkledun Avenue, and called it Bellevue, which name it bears to this day.

In 1813 Hamilton became a point of military importance. General Vincent retired from the Niagara frontier to Burling-



1. James Street, West Side.
2. King Street, North Side.
3. King Street, South Side.
4. Corner of King and James Streets.

ton Heights on the north-west boundaries of the city, and from that base achieved his brilliant victory over the American army at Stoney Creek in June, 1813.

In this year George Hamilton laid out his farm in village lots and from him the settlement took its present name. In 1814 Wm. Sheldon opened a general store in a frame building at the corner of King and John streets. Shortly afterwards John Aikman commenced the making and repairing of wagons at a workshop situated on the south side of King Street, opposite the present Gore Park, and nearby Edward Jackson started a tinshop. Other trades quickly followed until the community was provided with everything that was necessary for a self-contained village.

The first impetus to the industrial life of Hamilton can be set down to the year 1823, when the Government passed an Act for the construction of the Burlington Canal to connect the bay with Lake Ontario. This was completed and opened for navigation by 1834 at a total cost of $94,000. With its opening Hamilton at once became the head of navigation on Lake Ontario and Ancaster and Dundas which had up to then controlled the trade of the western part of the Province were soon left far behind.

The Desjardins Canal, connecting Hamilton and Dundas, chartered in 1816, was also completed in 1834, and for a long time did a tremendous business, but with the advent of the railways, fell into disuse, and is now of no practical utility.

In 1846, on the 9th of June, Hamilton was incorporated as a city, with a population of 6,832, and an assessed value within corporation limits of £117,720.

It was, however, in the fifties that a real growth commenced. The coming of the Great Western Railway established an era of industrial activity. The population of the city increased from 3,446 in 1841 to 10,312 in 1850, and in 1858 was estimated at 27,500. Then came the crisis of 1859, and with it financial disaster to Hamilton.

To quote from a writer in 1872:

"The young city became too ambitious. It undertook too much. It had invested largely in railways. It built magnificent waterworks. It dug expensive sewers. It erected gasworks; and the burden of the debt which it brought upon itself was too much for its people to bear. Years of disaster followed. Property fell in value. Busines decayed. The population decreased. In 1861 the government census commissioners found but 19,096 souls here, and three years later the city assessors reported only 17,000."

Hamiltonians, however, even in those early days had a reputation for tenacity and loyalty. They rallied nobly from this state of depression. Business revived, and Hamilton once more entered the race with other Canadian cities. Happily she has not since that time suffered such reverses, and the history of the city has been a record of steady and uninterrupted progress to the present day.

The Modern City.

Hamilton is naturally a beautiful city. Industrialism is so often asociated with dirt and squalor that it is a pleasant relief to come upon a place of the size of Hamilton where so many factories are actively engaged in production and yet where the environment is so pleasing.

To see Hamilton aright, one should climb the celebrated mountain that forms the background of the city. From its summit, a magnificent view is to be had. The city lies immediately below with its wide, well-paved streets, its fine residences and public buildings and its wealth of beautiful shade trees. To the north are the waters of Hamilton Bay; to the west stretches Dundas Valley; to the east lies Burlington Beach and beyond, Lake Ontario; while to the south-east extends the garden of Canada, the beginning of the wonderful fruit district of the Niagara Peninsula.

Added to these natural advantages, there is a system of parks, upon which great care has been lavished. A few years ago the city secured possession of the whole face of the mountain overlooking the city for a distance of five miles, and this will play an important part in the future park development work. At present there are fifteen parks and public squares, of which the most famous is Gore Park at the very heart of the city.

The city's educational facilities are of the best, including nineteen public schools, with over 10,000 scholars and 260 teachers; a collegiate institute, than which few are better equipped on the continent; a normal school, where teachers are trained; and a technical and art school.

Transportation Facilities.

Hamilton is most advantageously located for both rail and water communication. The city lies at the head of Lake Ontario and naturally forms the marine depot for a large section of country. The local trade with the near lake ports is large and freighters carry great cargoes to and from upper lake points and along the St. Lawrence River. Several lines have a regular freight service in and out of Hamilton, while a pasesnger service is maintained at frequent intervals with Toronto.

The railways serving Hamilton are the Grand Trunk, the Toronto, Hamilton & Buffalo and the Canadian Pacific. Spur lines tap the factory district at frequent intervals.

In the matter of electric railways, Hamilton has shown great enterprise. It has a greater area served by radials than any other Canadian city.

Electric Power.

Hamilton is served with electric energy by both the Hydro-Electric Power Commission of Ontario and the Dominion Power & Transmission Co., the latter a private corporation.

The municipal system was started in 1911 and it has developed to large proportions. It includes the street lighting.

The Dominion Power Co. develops power at De Cew Falls, a few miles from St. Catharines, the water being taken from the Welland Canal. It was organized in 1897. There are now three main transmission lines to Hamilton. The company operates all the electric railway lines centering in Hamilton, including the Hamilton Street Railway.

Industrial Development.

The year 1897 may be said to mark the starting point of the intensification of the factory system in Hamilton. Then began the diversification of enterprise which made posible the establishment of inter-related industries, which grouped together form an economic unit, wherein materials for construction and manufacture were obtainable in many instances without resort to outside sources.

In addition to the above factors abundant supplies of food products were easily marketable from a farming community around the city, happily situated in respect of good fruit vegetable and market conveniences.

Tariffs and government policies may be lightly regarded in the case of a city of upwards of 100,000 inhabitants, situated in the centre of a network of steam and electric railroads, affording the best of connections with American and Canadian markets, possessing excellent harbor facilities, which are being rapidly improved so as to permit of speedy and economic shipments to and from the manufacturer and the consumer.

Cheap motive power is of the utmost importance in determining the location of a plant. If reasonable estimates of cost are obtainable, showing a likely continuance of such costs, for the future, great difficulties are cleared away. With the average price for horse power per annum to factories ranging from $12 to $18, the power situation is most satisfactory. Uninterrupted service, freedom from agitation, an incipient competition from government sources, make it appear that in the future the industries will get motive power on most enviable terms.

Labor, that other important factor in the economics of production, has never reached the stage of a problem in Hamilton; lockouts and strikes are comparative strangers to its factory system. This is due to some extent to the variety of occupations which its factories afford.

Wage increases have been made and are considered to be a fair proportion of the increasing value of output. In proof of this statistics show a wage rate per employee of $81 a year in excess of the average throughout Canada.



Bank of Hamilton, Traders Bank, Federal Life Assurance Co., Hamilton Provident & Loan Co., Canada Life Assurance Co.

The living costs to the laboring man compare favorably with those obtaining in other cities. Prices of food stuffs are, as recent inquiry by competing cities show, on a lower basis than any other city in Canada.

A remarkably low percentage of unemployment prevails in Hamilton, surplus manual labor finds a ready occupation in the city's service for development work in connection with street extensions, sewers, sidewalks, etc. The seasonable variations in trade exert small influence in Hamilton, and the so-called mobility of labor operates with little fluctuation so disconcerting to manufacturers.

An inspection of the Dominion census returns for 1911 is interesting, as reflecting the character of the agencies of production in Hamilton. It shows that the industries are basic, in that they manufacture producers' goods, i.e., the things that enter into the construction of plant and equipment used



Beauty Spots

by other industries; things not at the beck and call of a varying public demand, such as exists for popular articles of consumption. Here one finds that taken as a whole the branch of industry which ranks second in importance in Canada as regards amount of capital embarked, number of operatives employed, and value of output produced, is the steam, and foundry and machine shop business. In this Hamilton stands pre-eminent as compared with other Canadian cities. Thus the city justifiably calls itself "the Birmingham of Canada." Again it is to be observed from the census figures that the biggest factories have not been responsible for the best results. It appears that establishments of a moderate size, representing an investment of under $200,000 have a more important bearing than is generally supposed. In fact they represent more than 94 per cent. of the total establishments doing business and produce 37 per cent. of the total value of products in Canada.

In conection with this it may be said that whilst Hamilton is a city of large industries, some employing 2,800 hands, it also possesses a large number of smaller ones, which make for the diversity of enterprises so much sought after.

Toronto Branch Reviews Its Year

At the Recent Annual Meeting Several Interesting Reports were Presented to the Membership

IN a comprehensive survey of the year's developments in various departments of the nation's business affairs, Mr. W. C. Coulter, retiring chairman of the Toronto Branch of the Canadian Manufacturers' Association, gave those members who attended the annual meeting of the Branch on May 18, a thoughtful estimate of what had been accomplished during the past twelve months.

After referring to the valuable services of those who had been associated with him in the work of the Branch, Mr. Coulter alluded to the wonderful growth of Canada's export trade, and the great development that had taken place in the munitions industry. The Ontario Commission appointed to organize the provincial resources of men and money, came in for his hearty approval. Following this, he dealt frankly with the recruiting situation.

"Our government," said Mr. Coulter, "has announced its intention to raise, equip and maintain an army of 500,000, and we believe we can do it, but if the Government persists in the present method of enrolling every eligible man who offers his services, regardless of the part he plays in our scheme of economic production, it will ultimately only weaken the cause it is intended to serve. I do not belittle the need for men at the front, but it would be a gross miscalculation not to make sure of leaving at home those who will be depended upon to keep the men at the front clothed, fed and supplied with munitions.

"Practically all the problems that confront us to-day as manufacturers have arisen out of the great war. A year ago we were struggling to find employment for our workmen, owing to the sudden panic stricken reduction in buyers. During the year the surplus workmen have enlisted for the front, and now the supply is rapidly becoming inadequate. At the same time the buying public are coming back into the market until, when last year we were facing the question of insufficient work, this year we are met with the difficulty of insufficient workers, and while the war continues matters will not improve, and we as manufacturers owe it to ourselves and our country to make Production our first consideration.

"The ministers of Agriculture and Finance issued a joint notice lately on Production and Thrift, and I would strongly recommend manufacturers to apply this as carefully as they can to their business. Production not only of munitions, but of supplies of all kinds is as necessary to the successful completion of the war as men for the trenches. If you cannot be the man behind the gun, see that you manfully take up the task of the man behind the Man, behind the gun.

National Register Needed.

"It is plainly the duty of the Government to harmonize the conflict between its plans for recruiting on the one hand and production on the other. The manufacturers have loyally supported recruiting, but they are strongly of the view that this could best be effected on some system like the Derby plan by which single men should be taken in preference to married men, and single men who could be spared by individual establishments should be taken ahead of skilled men who could ill be spared; in other words, a national register is the only proper method no matter from what viewpoint it is regarded."

Turning to the tariff question, Mr. Coulter expressed the opinion that "the complete and final suppression of the German menace will only be achieved when it is placed beyond the power of Germany to recover the trade she has temporarily lost. A great deal of that trade has been conducted with countries that are now allied with Great Britain against her, and, therefore have a common interest in ensuring the completness of Germany's overthrow. It seems most natural and possible then that by means of preferential and reciprocal tariffs within the Empire and among the allies, a scheme should be thoroughly inaugurated to reserve the great consuming markets for their mutual enjoyment and to the exclusion of the enemy, and so hasten their own economic recovery while retarding that of the central powers. Favorable tariff treatment would be extended to neutral countries, but the products of the central powers should be consistently subject to such surtaxes and other disabilities as will effectually restrict their competition in the markets of the allies."

In Great Britain, according to Mr. Coulter, indications are not wanting to point the way to a quickening of thought. Great Britain's fiscal policy after the war will be determined not by academic theory, but by stern necessity. She will surround herself with defensive works that will ensure for her industries the same development that similar measures of defence have secured for Germany and the United States.

Executive Committee's Report.

The Executive Committee's report dealt in considerable detail with the subjects of employment and recruiting, outlining the developments that had taken place during the year. Reference was made to the special meeting of the Branch on January 12, when a resolution was carried, pledging the Association to prepare such plans as would best enable manufacturers to co-operate with officers in charge of recruiting and as far as posible conserve the industrial efficiency of manufacturers' establishments. The steps that had been taken subsequently to carry out the purpose of this resolution were described in their order.

The report expressed confidence in the appointment of the new chief of the Fire Department and congratulated the city on the selection of Thomas Bradshaw as Commissioner of Finance.

Referring to the opening of the new Technical School, the report stated that the Toronto Branch had "recently directed a circular to be issued to Toronto manufacturers inviting donations of thirty scholarships of the value of $25 each to be awarded in connection with the regular day courses for the current year, with a view to encouraging the boys and girls to make their best efforts and to continue their courses to completion, consideration being given in making the awards for regularity of attendance, application to study and progress. The names of the donors of the schalorships will be published in due course in the annual school calendar."

Mention was made in the report of the departure of the secretary on military service and regret was expressed at the death of the late Mr. A. R. Clarke, who had served a term as chairman of the Branch in 1912.

Slight Drop in Membership.

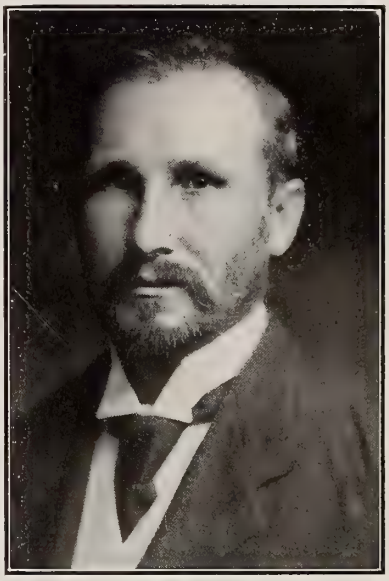
The secretary's report showed that during the year the membership of the Branch had been reduced by twenty-four, there having been forty-one resignations as against seventeen applications for new memberships. Of the number resigning, twenty-two went out of business mainly owing to the unusual trade conditions. The usual membership campaign had to be temporarily postponed owing to other work demanding the attention of the executive staff. The membership is now 713.

The Educational Committee at a meeting on May 2nd, directed the secretary to undertake a personal campaign to secure a series of scholarships to be awarded in connection with the day courses at the Central Technical School for the present year. Two weeks was a short space, but the secretary was glad to report that he had received signatures to a number which, with the scholarships already being donated, will yield a total of twenty-nine scholarships, of a cash value of $725.

Officers Elected.

The following officers were elected for the ensuing year:

Chairman, Thomas Roden, Roden Bros., Limited; vice-chairman, L. L. Anthes, Anthes Foundry, Limited; Executive Committee: Griffith B. Clarke, John Hillock, A. H. Jeffrey, W. C. Laidlaw, James Lister, J. B. McCarter, R. L. McIntyre, T. F. Moneypenny, C. M. Murray, J. P. Muray, W. C. Phillips, J. A. Riordon, J. A. Scythes, J. Western, A. L. Young.



THOMAS RODEN
Elected Chairman of Toronto Branch, 1916-1917

The following were elected representatives to the Executive Council of the General Association: L. L. Anthes, G. Frank Beer, George Brigden, W. C. Coulter, R. D. Fairbairn, Thos. Findley, John Firstbrook, R. S. Gourley, Sam Harris, J. S. McKinnon, T. F. Moneypenny, W. C. Phillips, T. A. Russell, W. B. Tindall, J. Western.

The representatives to the Canadian National Exhibition Association were elected as follows: George Brigden, W. C. Coulter, John Firstbrook, E. J. Freyseng, R. S. Gourlay, G. T. Irving, J. S. McKinnon, W. C. Phillips, Frank A. Rolph, Thos. Roden, T. A. Russell, J. P. Murray.

GERMAN TWINE AND YARN MADE FROM PAPER.

As Germany has been unable since the war to import in sufficient quantities the raw materials used for making twine and string, German manufacturers have turned to the production of these articles from paper and have succeeded so well that they now appear upon the market. Paper twine and paper yarn cannot be said to be novelties nor products of the war, as Japan manufactured yarn and textiles from paper pulp over a hundred years ago, America some sixty years ago, and Germany since 1890. The products resemble those made from jute or hemp.—*Scientific American.*

PROGRESS AT HAMILTON

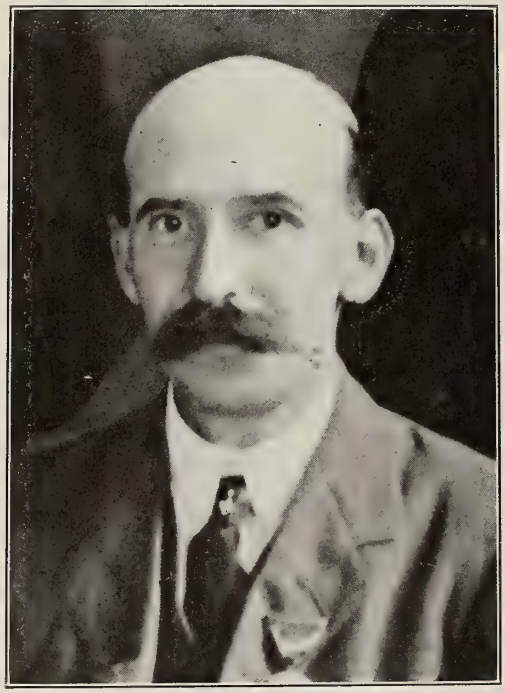
Members of the Hamilton Branch Hold Their Annual Meeting and Sum Up the Year's Activities

ON Friday, May 19, the Hamilton Branch of the Canadian Manufacturers' Association held its annual meeting at headquarters in the Sun Life Building, James Street North. The chair was taken by Mr. H. J. Waddie, who has been the acting head of the Branch since the retirement of Mr. R. R. Moodie, now on active service as colonel of the 205th Battalion.

In his opening remarks, the chairman referred appreciatively to Mr. Moodie's past services and to the splendid work he was now doing. He then proceeded to review the various activities of the Hamilton Branch during the past year.

Technical Education.

"To encourage the young men employed in our various industries to improve their opportunities, and make them



H. J. WADDIE
Who has been Acting Chairman of the Hamilton Branch

more valuable to themselves as well as to their employers," said Mr. Waddie, "this Branch arranged for a number of prizes for the Technical School. A special evening was arranged for at the School on September 9th of last year, the chief speaker being Thomas Bengough, Editor of 'Training,' and Secretary of the Ontario Association for the Promotion of Technical Education. Prizes from this Branch amounting to $49.50 in cash and $43.50 in goods, a total of $93.00, were presented to the successful students. It was also undertaken that this list of prizes would be duplicated for the present term, and our Executive Committee at its last meeting authorized that this be done. Your Technical Education Committee took up with the Industrial Technical Committee of the Board of Education the necessity of taking steps toward the erection of a properly equipped Technical School, located preferably in proximity to the manufacturing district.

"It was suggested that the building should be built with possibility of considerable enlargement in the future, and the location should be large enough to provide for many years to come. It was also strongly urged that the most competent staff of teachers procurable be secured, and that proper publicity be given as to the benefits to be derived from the school. The necessity was pointed out of technical training for injured returned soldiers, and the hearty co-operation of this Association was assured. We believe it is no longer a secret that the Board of Education have secured a splendid location near Barton Street, extending through from Wentworth Street to Sherman Avenue, and are preparing plans for a new Technical School."

(After referring to the progress of the daylight saving movement; the three-cent stamp agitation; the eastern rates case, and the proposal to establish a commercial museum in Canada, Mr. Waddie went on to discuss local military conditions.)

Military Matters.

"A number of matters of a military nature have taken up a great deal of attention of the officers and members of the Branch," said he.

"The military guard of our public utilities was withdrawn by the military authorities and following a strong resolution addressed to the Prime Minister and Minister of Militia, the guard was finally restored.

"The Hamilton Recruiting League was organized on July 7th last, and a Manufacturers' Committee was formed composed of R. R. Moodie, H. J. Waddie, C. A. Birge, H. H. Champ, H. H. Biggert, H. Bostwick, Jas. Wagstaffe, and H. E. Waterman.

"The manufacturers have encouraged recruiting with their every resource, but have now come to the opinion that the present methods of recruiting are not in the best interests of the war situation as a whole. Through the above mentioned committee, however, we have gone on record as being entirely in accord with the principles of the Hamilton Memorial of the Hamilton Recruiting League, which aims at a proper system of selection in securing recruits.

"It came to the notice of the Branch that there was no apparent organized effort being made to properly look after the securing of employment for returned soldiers, and the Branch undertook this work temporarily until other arrangements could be made, and engaged a returned soldier as employment secretary. The office was opened November 29th, and starting May 15th the City, through the Mayor, has arranged to take over the work. Up to the time of handing over our records, one hundred and twenty-three men had been placed, and many more assigned to positions who for their own reasons did not report. Some thirty-seven men were not yet discharged from the convalescent homes, and a number of positions were awaiting men. The total salary paid out in connection with this work is $278.50, which we have been assured will be returned to us by the Head Office of the Association.

New Industries.

"Since our last meeting a number of new industries have located, or have decided to locate in Hamilton, including the Canadian Cartridge Company, W. F. Rawleigh Company, Monarch Machine Tool Company, Sanitary Wiping Rag Company, Perkins Glue Company, Ontario Yarn Company, Peerless Weaving & Belting Company.

In Memoriam.

"I will ask the members to rise while I read the names of the following members who, during the past year, have gone to their reward.

"Colin Campbell of R. Campbell's Sons.

"David McIlroy of Hamilton Steel Construction Co.

"The past year has been an arduous one in every line of industry, necessitating the closest application of the manufacturers to their business, and the calls upon their time in connection with the various patriotic organizations have been heavy, and on this account we have not been able to accomplish perhaps as much as we would like to have done."

Secretary's Report.

Secretary H. E. Waterman's report showed that during the year eight new members had joined the Branch. While resignations, due to firms going out of business or leaving the district, totalled four. This brought the Branch membership up to 208, which under all conditions is considered a very good showing. A strong effort will be made to increase the membership this year.

The statement of receipts and disbursements was also presented and showed a comfortable balance on hand after all expenses had been met.

Election of Officers.

The following officers and committees were elected:—

Officers.—W. H. Marsh, Standard Underground Cable Co. of Canada, Limited, Chairman; F. J. Howell, Howell Lithographic Co., Limited, Vice-Chairman; H. E. Waterman, Secretary-Treasurer.

Executive Committee.—H. H. Champ, Steel Company of Canada, Limited; Geo. C. Coppley, Coppley, Noyes & Randall, Limited; W. R. Dunn, International Harvester Co. of Canada, Limited; C. A. Murton, Canada Ready Print Company; Henry Bertram, John Bertram & Sons Co., Limited; J. A. McMahon, Union Drawn Steel Co., Limited; A. C. Garden, National Drug & Chemical Co. of Canada, Limited; G. H. Douglas, Thornton & Douglas, Limited; H. P. Hubbard, E. C. Atkins & Company, Limited; R. Hobson, Steel Co. of Canada, Limited.

Ex-Officio Members.—H. H. Biggert, International Harvester of Canada, Limited; Cyrus A. Birge, Steel Co. of Canada, Limited; H. J. Waddie, Canadian Drawn Steel Co., Limited; R. R. Moodie, Eagle Knitting Co., Limited; A. F. Hatch, Canada Steel Goods Co., Limited.

Finance Committee.—G. H. Douglas, Thornton & Douglas, Limited, Chairman; H. H. Champ, Steel Co. of Canada, Limited; R. M. Roy, Hamilton Bridge Works Co., Limited; C. W. Sherman, Dominion Steel Foundry Co., Limited; N. Slater, Allith Mfg. Co., Limited; K. Bethune, American Can Company; Cyrus A. Birge, Steel Co. of Canada, Limited.

Membership Committee.—C. A. Murton, Canada Ready Print Company; W. N. Currie, Burlington Steel Co., Limited; J. A. McMahon, Union Drawn Steel Co., Limited; R. M. Roy, Hamilton Bridge Works Co., Limited; G. W. Robinson, P. B. Yates Machine Co., Limited; K. Bethune, American Can Company; G. E. Main, McClary Mfg. Co.

Municipal and Legislation Committee.—A. C. Garden, National Drug & Chemical Co. of Canada, Limited, Chairman; J. O. Callaghan, Steel Co. of Canada, Limited; J. W. Millard, Meriden Britannia Co., Limited; D. R. Wood, Wood Milling Company; Geo. A. Simpson, Steel Co. of Canada, Limited.

Reception and Entertainment Committee.—H. P. Hubbard, E. C. Atkins & Company, Chairman; A. H. Tallman, Tallman Brass & Metal Company; G. E. Messer, Bird & Son; H. G. Wright, E. T. Wright & Company; P. M. Yeates, National Machinery & Supply Co., Limited; Jas. Wagstaffe, Wagstaffe Limited; F. M. Hatch, Canada Steel Goods Co., Limited; C. A. Murton, Canada Ready Print Company.

Technical Education Committee.—W. S. Burrill, Imperial Cotton Co., Limited; F. R. Close, Duncan Lithographing Co., Limited; Walder Parke, Parke & Parke; C. R. McCullough, Ontario Engraving Company; R. C. Fearman, F. W. Fearman Co., Limited; R. A. Robertson, Robert Duncan & Company; F. J. Howell, Howell Lithographic Co., Limited; H. J. Waddie, Canadian Drawn Steel Co., Limited.

Transportation Committee.—W. R. Duncan, International Harvester Co. of Canada, Limited, Chairman; F. H. Whitton, Steel Co. of Canada, Limited; A. F. Hatch, Canada Steel Goods Co. Limited; C. A. Hunter, Canadian Westinghouse Co., Limited; W. R. Drynan, Dominion Canners, Limited; Henry Bertram, John Bertram & Sons Co., Limited; F. W. Dean, Steel Co. of Canada, Limited.



LT.-COL. R. R. MOODIE
Retiring Chairman of the Hamilton Branch

Nominations.

For Executive Council of Association.—H. H. Champ, Steel Co. of Canada, Limited; A. F. Hatch, Canada Steel Goods Co., Limited; H. J. Waddie, Canadian Drawn Steel Co., Limited; Geo. C. Coppley, Coppley, Noyes & Randall, Limited; H. H. Biggert, International Harvester Co. of Canada, Limited.

Parliamentary Committee.—H. J. Waddie, Canadian Drawn Steel Co., Limited.

Insurance Committee.—J. W. Millard, Meriden Britannia Co., Limited.

Railway and Transportation Committee.—W. R. Dunn, International Harvester Co. of Canada, Limited; A. F. Hatch, Canada Steel Goods Co., Limited.

Tariff Committee.—H. H. Champ, Steel Co. of Canada, Limited.

Technical Education Committee.—R. A. Robertson, Robert Duncan & Company; F. J. Howell, Howell Lithographic Co., Limited; F. A. Merrick, Canadian Westinghouse Co., Limited.

Membership and Reception Committee.—K. Bethune, American Can Company; H. L. Frost, Frost Wire Fence Co., Limited; J. A. McMahon, Union Drawn Steel Co., Limited.

NATURE AS AN AID TO MAKING HAPPY WORKERS

What One Large United States Industry has Accomplished in the Way of Factory Beautification

By WARFIELD WEBB

(Reprinted from the Dodge Idea)

A GREAT change has taken place in the past few years in the conception of factory design and construction and surroundings. Well do some of us remember, and not so long ago either, when a plant was planned and built with sole idea of utility, and with no thought of beauty or architecture and grounds.

Factories of the old school looked more like prisons and barracks—sombre, dark and forbidding places, with ash piles and rubbish the only views from small and dirty windows.

An effort has been made lately by architects, builders and owners to get away from the forbidding aspect and make the factory and its grounds more ideal. It is now not exceptional to see splendid examples of industrial architecture, models in locations and surroundings. Indeed, many manufacturers to my own personal knowledge have spent good sized fortunes in landscape development, employing experts to lay out parks and gardens, superintend planting, etc., and maintaining a staff of gardeners to keep up appearances in a permanent sort of way.

Here you will find well kept lawns and parkways tastefully arranged with flowers in season, shrubbery of the blooming variety, trees, ponds for lilies, etc., the walls fairly alive with climbing vines and the entrance ways bowers of beauty in climbing roses, with tubs of attractive plants standing as magnificent sentinels.

Many plans have been worked out to attain the desired end in industrial betterment. There is some good in most every undertaking, and each of these has its direct bearing on the ultimate object sought. No effort is wasted. The ultimate end is results, and to attain these is it not well to make the pathway more pleasant and the environment more inviting? Sometimes the cost is only a trivial part of the labor and the achievements are greatly in excess of the sum total of energy, labor and money expended.

The Influence of Flowers.

The power of music to sooth our nature is not very greatly in advance of the secret of flowers to bring us solace. Even the lowest type of humanity is given new inspiration with flowers working their tender and subtle influence. The man or woman who is loath to leave the fascination of the city, is nevertheless a secret lover of nature and her beauty. If we can make the worker's hours of toil less barren and more filled with something akin to a heyday pastime, have we not done something worth while to retain a more effective employe, and one whose labors will be of greater value? Make the surroundings inviting and you have done much toward realizing the object that is sometimes lacking in your plant.

The Yale and Towne Manufacturing Company, Stamford, Conn., five or more years ago began a campaign of beauty on buildings and grounds covering a space of twenty-one acres. I want to talk to you in this issue of how it all happened and the result thus far.

Some years since, when Henry R. Towne was active in the management of the business, he spent some time in Germany, where he was deeply impressed with the numerous gardens, or *anlagen*—small park spaces—in every small city. Even where the space was limited in size, there was a plot of flowers, trees and shrubbery It added to the charm of the surroundings, and gave to every locality a distinct environment. The idea then occurred to Mr. Towne that the plan was feasible in connection with the decoration of his own factory surroundings, and on his return to the United States the matter was taken up and passed upon favorably by his associates. A landscape architect was employed and the work started.

Prior to that time the grounds had been kept in order, but no attempt had been made to add any special charm to them. The open space was barren, and it lacked anything that would in the least inspire the worker to greater effort. The open country was not an inviting perspective from the aesthetic viewpoint, and the lack of floral decoration perhaps had not been noted, only that its magic beauty had not awakened in the minds of the workers the marvelous change made possible with the planting of the same with nature's gifts.

The Programme at Stamford.

The work undertaken comprised the erection of two greenhouses, planting of flowers in beds and along the walks, vines, shrubs and trees; the building of trellis work, concrete curbing, fountains, flagpole and installation of electric lights. The bleak grounds, in short, were transformed into a park, and the view from the windows changed materially. Most of this work was completed in the spring and summer of 1911, but since that time the work has been extended from time to time.

The original cost was $15,000, while it is estimated that the annual expense is $3,000. The idea is to make every section of the grounds fairly teem with new life, and to offer to every worker a view that would be an inspiration to do better work.

The ampelopsis vine, that has wended its way over the bleak wall of the immense plant, has transformed that inartistic view to one of beauty. Privet hedges along the walks add to the charm of the setting. Playing fountains sing their songs of gladness. Wherever one gazes, there is a greeting for the eyes, and there is the welcome that comes with the sight and pungent odor of flowers and plants.

Flowers are not only to be seen here while the summer is on, but all through the year, for two greenhouses have made this possible. These greenhouses are used in winter for the storing of tender plants and shrubs, and for the propagation of cuttings for summer planting. Being quite large, they enable the gardeners to raise flowers, these being sent to the homes of employes when illness in the family is reported.

A gardener and one assistant are employed, their duties being to look after the greenhouses and the grounds all the year. They are controlled by the industrial betterment department of the plant.

When we consider that there are nearly four thousand employes at Stamford, and the effect that this form of environment has had upon them, the real desirability of the plan is made plain. It has worked magic, and what can be done at one plant is possible at others.



MAIN BUILDING
Bureau of Standards, Washington, D.C.

WHAT THE BUREAU OF STANDARDS AT WASHINGTON IS ACCOMPLISHING

By THEO. H. WARDLEWORTH

A VAST amount of quiet research work has been and is being conducted by the United States Government at the Bureau of Standards, situated at Washington, D.C. Though the investigations are carried on without much notice from the outside world they are of wide reaching affect and touch all classes of the community.

Most of the workers in the varied industries of the United States do not realize that they are so largely indebted to the labours of the earnest bond of scientists, who toil at the Bureau for their benefit in particular and for the welfare of the entire population of the United States in general.

To give some idea of the extent of the ground covered, it may be stated that a day's mail to the director brings enquiries from dyers, textile engineers, iron pipe makers, iron foundries, glass blowers, lamp makers, boiler makers, chemical manufacturers, contractors in concrete, railroad commissioners, makers of fine mesh sieves, paper makers, railroad officials, officials of international science, commissions, makers or oleomargarin, soap makers, carpet makers, glass workers, meat packers, makers of gas meters, water meters and watches.

Standards of Weight and Length.

To answer all the queries which flow in daily, the Bureau has a wonderful equipment.

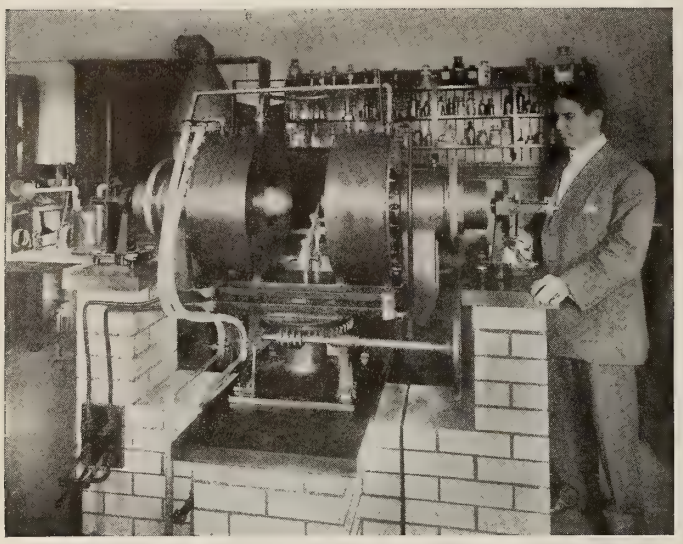
First and foremost come the standards of weight and length. To secure the greatest accuracy in weighing, a balance is provided which is a marvellous piece of mechanism. So delicate is this instrument and so accurace that it measures to 1-100,000,000 part. To secure the most perfect results it is operated in a glass case so as to avoid the influence of unnoticed air currents which may be present in the room. Another balance is so carefully protected from external disturbances that the operator when using it has to stand at a distance so that the heat of his body may not cause any error. An ingenious system of control rods and a telescope for reading the scales are provided so that the expert need not approach the instrument while making his investigations, and thus cause disturbances by the heat of his body.

The principal weight used in the Bureau is the standard kilogram presented by the French Government. It is made of platinum-iridium. This weight is used as a basis for standardizing all other weights, such as the pound avoirdupois and troy.

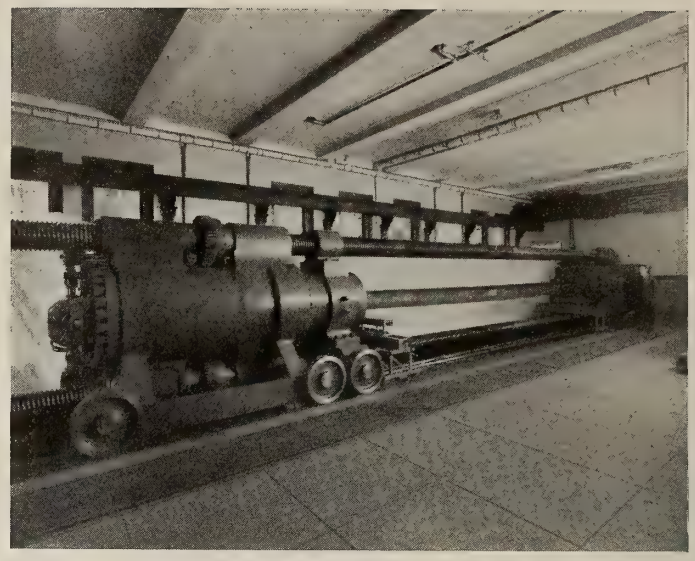
Confirming the Standard of Length.

The measurement of length is confirmed with the same extreme care. The basis used is the meter and the standard is the space marked on the bar of platinum-iridium which is kept at the International Bureau of Weights and Measures, at Bretauil near Paris, France. This bar is maintained at the temperature of melting ice. Copies of this bar have been distributed by the French Government to the different Governments of the world. The comparison of the copy in the possession of the United States Government with any other meter is a very delicate operation: accurate results are only obtained by the use of special baths and microscopes. When measures of great length have to be gauged, use is made of a standard, 164 feet long, kept in a tunnel in the basement of the building. This compartment is kept at an even temperature by means of a system of hot and cold pipes.

Time is measured by a marvel of precision. The Bureau possesses a clock—The Riefler—which keeps time within a variation of half a second a month. The pendulum is formed of nickel steel, which limits the expansion to a negligible



THE WORLD'S MOST POWERFUL MAGNET
Used to Observe the Curious Effect of Magnetism on Light Waves



GIANT TESTING MACHINE
Registers with Equal Accuracy Power Necessary to Crush an Egg or Break a Steel Girder

quantity. This clock is self-winding and runs in a partial vacuum. Regulation is secured by admitting air from time to time into the partial vacuum, every precaution being taken to free the air from moisture and to maintain an even temperature. Checks are made daily by observations at the Observatory of the United States.

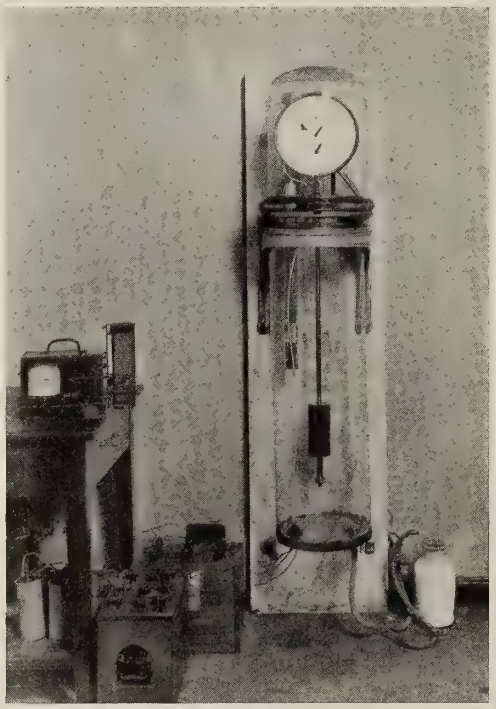
Pressure is tested by an ingenious apparatus by which the slightest pressure on a thick solid bar of iron can be detected. Even the weight of a pin or the pressure of a finger is clearly indicated as the apparatus will respond to an impression of one twenty-thousandth of an inch or even less.

A Giant Testing Machine.

Compression is gauged by the great Olsen testing machine, at the Pittsburg Laboratories of the Bureau of Standards. It is employed for ascertaining the compressive strength of materials or great columns of steel or masonry. This machine can exert a pressure of 10,000,000 lbs. What this means can be realized by knowing that it would be sufficient to break the steel shaft of the largest vessel afloat. Its value in testing the component parts of sky scrapers can be readily realised.

Transportation companies are much interested in the work of the Bureau, as it is at present trying to solve the problem of defective rails before they are put into use. The experiments now being conducted are in the lure of magnetic and mechanical properties of rails, and they lead to the hope that a method will soon be discovered by which the hidden flaws can be detected before the rail is laid. A defective rail is here shown—it failed under the weight of a passing train.

Strains—are tested by a giant emery testing machine, which can register with perfect accuracy the power to crush the most delicate object or tear apart the strongest girder. It exerts a pulling force of 1,500,000 pounds, or a compressive strength of 2,300,000 pounds. This machine has been of the greatesst value to the engineer—especially in the branches relating to the use of structural steel.



THE RIEFLER CLOCK
This Marvel of Precision Runs in a Partial Vacuum and is Self-Winding

Most Powerful of Magnets.

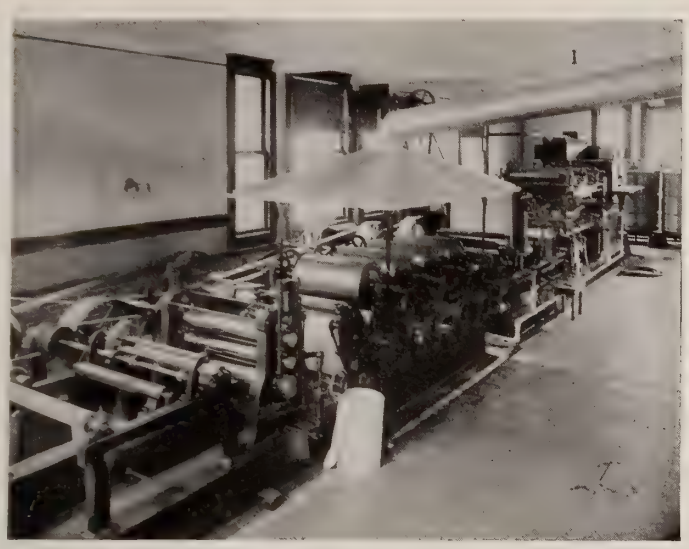
For magnetic observations—the Bureau employs the most powerful magnet in the world, not only is it used in the ordinary methods of magnetic work, but its power is so enormous that experiments as to the strange effects of magnetism on light waves are being conducted through its medium.

Paper making occupies much of the attention of the Bureau. It possesses a complete installation and the complex problems of the paper makers are constantly under consideration. The question of printed paper and its re-use has been dealt with successfully. The enormous quantities of out-of-date Government documents are now de-inked by a special process and the pulp is re-made into good serviceable paper,—this effecting a great economy for the Government Stationery Department.

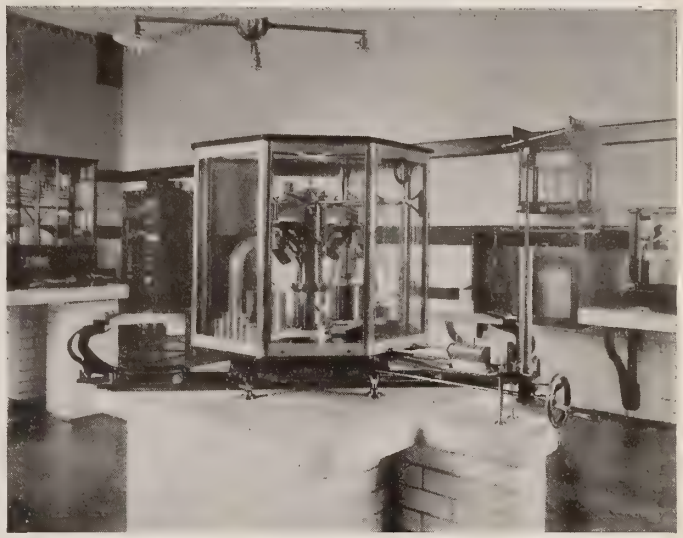
Metallurgy necessarily occupies a large share of attention, and it is well worth recording that the Bureau is prepared to supply as a check against independent assays standard samples of such metals as iron, steel, etc.

To give some idea of the elaborate care taken when a standard is to be fixed, it may be stated that in connection with the recent investigations regarding cement, no fewer than 80,000 experiments were carried out by the Bureau so as to secure accurate results.

The institution publishes a most valuable series of bulletins which are available to the public at a small cost. Ten volumes have so far been published. The subjects are grouped under Electricity, Photometry, Heat Optics, Weights and Measures, Chemistry and Metallurgy. Price lists on any desired subject are supplied free on application to the Secretary, Bureau of Standards, Washington, D.C.



COMPLETE PAPER-MAKING PLANT
A Beautifully Adjusted Paper Machine Capable of Doing Fine Experimental Work



LARGE BALANCE
So Accurate that it Measures to One-Hundred-Millionth Part

We may have to wait long before we can hope to have a Bureau of like kind in Canada, but the wonderful organization at Washington was once a thing of small beginning and that not so long since. Its inauguration was most modest, but its manifest value to the people of the United States has been so great that it is to be hoped that our own Government may see its way to institute a Bureau of a similar character, in the Dominion.

A CENTENARY CELEBRATION.

On August 29, 30 and 31 there will be celebrated at Ilion, N.Y., the centenary of the establishment of the Remington Arms-Union Metallic Cartridge Co. It will be an occasion when the making of the first Remington rifle will be duly honoured. One hundred years ago a young man of twenty-three was working with his father in a little blacksmith shop on the family estate. In the boy's mind had long been growing a yearning for a rifle—the hills about his father's farm were alive with game. On a memorable morning in 1816 the youth plucked up courage to ask his father for money to buy the coveted arm.

He was refused. But being refused only made him the more determined to have his desire. It is familiar history in the valley—told and retold from father to son by many a fireside—how young Remington, for that was his name, picked up scrap iron here and there, how by infinite labor he hammered it into a billet on the smithy anvil, how he carried the bar fifteen miles to Utica to have it bored and rifled, and how he finally assembled the complete rifle. It was a well made rifle and there was a demand for more—first among neighbors, then the people of the adjoining counties looked to Ilion for their hunting weapons. Day by day the Remington fame spread until the state and the nation, and finally the whole wide world, found the path to the always growing factories for which this farmer-smithy boy genius laid the foundation. To-day more than 25,000 workers are making firearms and ammunition which go forth under the Remington name.



GREAT OLSEN TESTING MACHINE
In Testing the Compressive Strength of Materials it can Exert Pressure of 10,000,000 Pounds

IMPERIAL BANK'S INCREASED ASSETS.

Each year sees the Imperial Bank drawing steadily nearer to the $100,000,000 mark, in point of assets. At the close of the 1915 fiscal year the bank's total assets stood at $75,568,247. To-day they amount to nearly $82,000,000. Savings deposits show an augmentation of approximately one and three-quarter millions and demand deposits are also very materially increased. Of the total funds entrusted to the bank by depositors, which aggregate approximately $55,000,000, a considerable portion has been invested in securities, increasing the amount so placed to nearly ten millions. This placement has increased the liquid position of the bank materially. It is to be noted that current loans are slightly contracted, but this is offset by an almost equal increase in circulation. Altogether the bank has fully maintained its strong position during a period of abnormal business conditions.

TRANSPORTATION

By J. E. WALSH

Eastern Rates Case.

THE following item appeared in the *Montreal Gazette* on April 19th, 1916:

"The Railway Commission has given no intimation in respect of its decision in the freight rate case. After the public hearing the Commission obtained much data from the Grand Trunk and C. P. R. The railways have been expecting the decision, and the Grand Trunk is particularly interested in it. The Commission, however, has given no hint as to the date upon which a decision might be expected."

As the Grand Trunk and Canadian Pacific Railways were the only ones that undertook to submit any evidence in support of the application for a general increase in rates in Eastern Canada, it would be interesting to know just what data was supplied the Railway Commission after the public hearings were closed.

Steamship Service Via the Panama Canal.

The appointment of a Canadian Customs officer at the port of New York so that Canadian goods can be shipped via that port and the Panama Canal to British Columbia was brought to the attention of the Government by Mr. Turriff, M.P., at Ottawa on May 17th. The Minister of Customs stated: "It does not seem to me that the present is the proper time to bring this matter up. It is true that it is about two years since this agitation started, but it is nearly two years since war was declared between Great Britain and Germany, and since that time it has been practically impossible to get vessels to carry traffic between Canada and the Mother Country. I understand that at the present time the Maple Leaf Line (this is the line which proposed a regular service) have no sailings via the Panama Canal; and my opinion is that you cannot count on any line of steamers doing this work, at least until the war is over."

It was further stated: "Having regard to the existing conditions, to the railway situation, to the intention of the Government to hold an investigation into railway matters, with a view of reorganizing our railway system, and to the policy of the Government in the matter of the development of our harbors—Montreal, Quebec, Halifax, St. ohn, Vancouver and Victoria—I feel that the committee will agree that the matter should rest until a later date."

Is this to be taken as the answer of the Government to the representations made by the Boards of Trade on the coast and this association? The representatives of the railways at different times have intimated that they have no objections to the appointment of an officer at the port of New York. At the same time they have readjusted many of the rates to the coast on a relative basis with conditions obtaining in the United States, and have thereby placed Eastern manufacturers in a better position to meet foreign competition.

That there has been a complete change in the situation on the coast since the outbreak of the war, in respect to import traffic, domestic and foreign, there is not the slightest doubt, and the wholesalers there are fully alive to the fact. Notwithstanding this, the people of British Columbia are still strongly of the opinion that if the appointment is made it will enable them to use the canal to advantage for certain of their natural products which they cannot now hope to move over the railways.

Private vs. Government Management.

When the war in Europe began, the management of the railways of Great Britain, which are all privately owned, was concentrated in the hands of a committee of their own general managers with a member of the Cabinet as titular chairman, and with one of the general managers as vice-chairman and the active head of the committee, comments a writer in the *Railway Age Gazette*. Under this direction the British railways have been remarkably successful in handling expeditiously all of the enormous military traffic, including soldiers, supplies and equipment, which has been turned over to them. The efficiency they have shown, which has been admitted on all hands, has been celebrated by the advocates of public ownership in this country as a triumph of Government management. This is not the way in which the matter is regarded where the facts are known and understood. Lord Claud Hamilton, the chairman of the Great Eastern Railway, is also a member of the House of Commons and an active public man. In an address at the annual meeting of the stockholders of the Great Eastern on February 11, Lord Hamilton drew the following contrast between the way in which the British Government's business has been handled by the Government, on the one hand, and by the railways on the other since the war began, and between the conditions which have produced such widely differing results:

"Does it not strike you how marked is the contrast of the smooth and successful working of the gigantic task imposed upon the committee of general managers with the reckless and haphazard manner in which much of the work also under, or partially under, Government control has been administered? The reason of the difference is obvious. In the one case the work has been performed by practical, trained business men; in the other case the preponderance of politicians, lawyers and Government officials—in many instances without any real business experience—has been the cause of a terrible waste of public money, of inefficiency, and of unpardonable delay. These mistakes are, I am glad to say, being gradually rectified, but the war has been in progress for one year and seven months, and it seems a grave reflection upon our system of Government that such maladministration should have been possible, and in the best interests of the country it is greatly to be deplored."

It is probable that the efficiency with which Germany has conducted her military operations has been partly due to the fact that the Government manages the railways. But, under the autocratic Government of Germany public business is entrusted to trained and experienced administrators, not to a "preponderence of politicians, lawyers . . . in many instances without any real business experience." If the Government had owned the railways of Great Britain their management, like that of other Government departments, doubtless would have been in the hands of a "preponderence of politicians and lawyers" without any business experience. The result would have been that on them also there would

have been "a terrible waste of public money, of inefficiency and of unpardonable delay." As the *Railway Age Gazette* frequently has remarked, the autocracy of Germany, and the Governments of England, the United States and other democratic countries, do not do business in the same way. Until democratic peoples are prepared to show the intelligence, make the sacrifices and submit to the discipline necessary to secure efficient Government, they will not have it, and until they get efficient Government they will best promote their own interests by entrusting to public officials as few enterprises as possible whose good management requires the exercise of administrative ability.

The Canadian Railroad Crisis.

The Canadian House of Commons passed on the same day a bill which provides for lending the Canadian Northern $15,000,000 to tide it over for a year and a bill appropriating $150,000 for the expenses of a commission to make a thorough investigation of the whole railroad situation. Canada is face to face with a crisis in her relations with the Canadian Northern and the Grand Trunk Pacific. There are three alternatives which are being seriously discussed: The Government can continue to lend money to these railroads until such time as they can begin to earn their fixed charges; or the Government can refuse to continue lending money, with the result that default will occur and receivership for both the Canadian Northern and Grand Trunk Pacific apparently inevitably take place; or, lastly, the Government can take over the two roads and add the 3,550 miles of the Grand Trunk Pacific (including the National Transcontinental) and the 4,966 miles of the Canadian Northern to the 1,889 miles of railroad now operated by the Canadian Government.

All of the stock of the Grand Trunk Pacific is held by the Grand Trunk. Part—about 75 per cent.—of the cost of building the Western division of the Grand Trunk Pacific was raised by the issue of bonds bearing the guarantee of the Dominion Government, and the remainder by bonds guaranteed by the Grand Trunk, and by bonds guaranteed by one or other of the Provinces. The Government itself built the Eastern division of the Grand Trunk Pacific (National Transcontinental) and the portion of this which is now being operated is being operated by the Intercolonial. The Canadian Northern stock is owned 40 per cent. by the Canadian Government and 60 per cent. by Mackenzie, Mann & Co. The Canadian Government guarantees $45,000,000 of the company's debenture bonds, and has made both cash and land grant subsidies to it. Some of the Provinces have guaranteed certain issues of bonds.

The securities of both the Grand Trunk Pacific and the Canadian Northern are very largely held in England. The Grand Trunk would probably be glad rather than sorry to give gratis its stock of the Grand Trunk Pacific to the Government if it were thereby relieved of its guarantee of Grand Trunk Pacific bonds. For the Government to get hold of the 60 per cent. of the Canadian Northern stock held by Mackenzie, Mann & Co., however, would be a very different undertaking. It is hardly conceivable that Sir William Mackenzie would relinquish control of this stock without a bitter fight, and he has the reputation of being a very good fighter.

Most thoughtful and patriotic Canadians agree that default on either Grand Trunk Pacific or Canadian Northern bonds, with resulting receivership, would be a blow to Canada's credit which should not be even considered. In the debates which have recently taken place in the House of Commons there have been members who urged that if one-seventh of the railroad mileage of the United States was in the hands of receivers it would be no unbearable calamity if the two Canadian roads which could not earn their fixed charges went into receivers' hands. But their urging has been half-hearted, and, when it came to a vote, they followed the lead of those who hold that receivership must be averted at any cost.

It narrows down, therefore, to a choice of continuing to advance money or of Government ownership and operation. As a matter of fact, however, there is nothing, or nearly nothing, for the Government to own at present. The equity in either the Grand Trunk Pacific or Canadian Northern, after creditors' claims, is nil. Whether such an equity will be created in the future depends on the growth of the country and wisdom and foresight in the management and development of the two railroad properties. The question, therefore, is as to whether Government operation or private management will most quickly develop this potential equity. It is illuminating to see that even the strongest advocates of Government operation are moved either by political motives pure and simple, or a fear that private management will some way or other get the best of the Government and get for private individuals the benefits which should be divided with the general public. There is hardly a man who makes even a pretense of urging that Government operation would be more economical or more progressive or better in any way than private management. Does not this fact in itself help to answer the question that is before the Canadian people? It ought to.

If a commission of experts is to be appointed to study the Canadian railroad situation, the commissioners should bear in mind that the question in the Grand Trunk Pacific and Canadian Northern cases is not whether Government ownership is a good thing or not, but whether private management or Government operation is more likely to create something for anyone to own.—*Railway Age Gazette.*

GERMAN INDUSTRY AND THE WAR.

How German manufacturers regard the effect of the war on their future trade with other countries is evidenced in the report of an address on "Industry and the War," recently delivered before a gathering of German engineers at Wurtemberg by Secretary Frolich, of the Association of German Engineering Works. According to the *Iron Age*, among other things he said: "There is no scarcity of the two most important raw materials, coal and iron, and the present production of pig iron and steel exceeds the requirements of the empire. Although the commandeering of metals by the Government at first caused great difficulties in the engineering industry, these have been overcome, thanks to the adaptability of the works. Economy in the use of high-speed steel has been necessary. The home trade has been but little affected by the war, and hardly any contracts have been cancelled, although in some cases execution has been postponed until after the war. Very few new contracts have been placed, but their absence was made good by the increased army orders. As a result of the pressure put upon the industry by the military requirements, the German works have acquired an experience in the rapid construction of automatic machines and in turning out machines on a wholesale scale which must have a beneficial effect upon the whole industry. The months of war have been months of learning which have laid the foundations of future technical progress. The export trade has suffered greatly, for it must be remembered that in normal times about one-third of the total output of the German engineering works is exported. After the war, neutral countries will probably act to a great extent as intermediaries in introducing German goods in what are now enemy countries."

INSVRANCE

April Fire Losses.

ACCORDING to estimates compiled by *The Monetary Times*, the total fire loss throughout Canada during the month of April amounted to $1,460,437, as compared with the March loss of $1,406,501, and $1,463,747 for April, 1915.

Investigation of Fire Insurance Rates in Ontario.

On the 10th of April, the Ontario Legislature adopted a resolution moved by Sir Adam Beck, which read as follows:

> "That in the opinion of this House, inquiry should be made into the control exercised by Underwriters' Associations and similar bodies, over the method of regulating and placing of insurance and the rates chargeable for insurance against loss or damage by fire or otherwise, and that His Honor the Lieutenant-Governor-in-Council be requested to name a Commission to conduct such inquiry under the "Public Inquiries Act" and to report the results thereof with such recommendations as may be deemed proper to His Honor the Lieutenant-Governor-in-Council, that action may be taken thereunder at the next session of the Legislature."

Canadian Fire Insurance During 1915.

According to the Abstract Report recently issued by the Dominion Insurance Department, the total amount paid in Canada for fire insurance premiums last year was $26,530,293, showing a falling off of $968,865 as compared with the previous year. The aggregate premiums for the two years in question were divided as follows:

	1914.	1915.	Decrease.
Canadian Companies	$ 5,016,653	$ 4,544,348	$472,305
British Companies	13,710,907	13,658,845	52,062
United States and other Foreign Companies	8,771,598	8,327,100	444,498

The average rate of premium charged per cent. during 1915 was 1.16 as compared with 1.17 in 1914 and 1.21 in 1913. The grand aggregate of fire premiums paid in Canada during the years 1869 to 1915 amounted to $422,999,050, while during the same period losses were paid to the amount of $256,996,231, a ratio of 60.75 per cent. of losses to premiums.

Difficulties of Liability Insurance.

The Maryland Casualty Company publishes a statement showing how difficult it is for a company transacting liability insurance to foresee the *entire* liability hazard of each assured, both immediate losses and late claims. The company states that nine of the larger companies in the States and Canada which have been writing liability insurance for ten years or more have thirty-two suits pending under liability policies which were issued at least ten years ago, in some instances considerably further back. Sixteen of the companies writing liability insurance have a total of five hundred and ninety suits now pending under liability policies which were issued in the period from five to ten years ago. When so many different companies, managed by different men, using different methods, have the same general experience, it is obvious that such experience is an unavoidable part of the business.

The Shingle Roof.

Writing of the Paris, Texas, conflagration which occurred on March 21st, and resulted in an estimated loss of $14,000,000, the Dallas *News* editorial says:

> "The shingle roof is blamed for the magnitude of this fire, and apparently with good reason. The shingle roof probably spreads a fire on a windy day about as well as could any contrivance which the ingenuity of man is capable of inventing. Once a shingle roof catches, every one of its shingles becomes a brand to carry the fire to other roofs. After thinking about it for a moment, one is apt to conclude that the remarkable things about such conflagrations as this at Paris is that we have so few of them.
>
> "The question of outlawing shingle roofs, that is, of forbidding the making of any more, ought to be taken up and acted on promptly. We are inclined to think that it ought to be done, both as a matter of justice and of expediency.
>
> "The shingle roof makes the careful too much liable for the sins of the careless. Even if non-combustible roofing material does cost more originally, it will probably pay for itself before a great while."

Tenant Responsible for Fire.

Mr. Justice Mercier in the Superior Court of Quebec recently rendered a judgment of special interest to tenants in relation to their responsibility to landlords for damages caused by fire to dwellings. This condemned George B. Reynolds to recompense Ida Florence Appleton to the extent of $1,830 for loss sustained through fire at a bungalow at Lakeside several days after Mr. Reynolds had entered into residence there in the summer of 1915. The action taken by the plaintiff was based on Article 1629 of the Civil Code of the Province of Quebec, which provides:

> "When loss by fire occurs in the premises leased there is a legal presumption in favor of the lessor that it was caused by the fault of the lessee, or of the person for whom he is responsible; and unless he proves the contrary, he is responsible to the lessor for such loss."

The defendant was unable to prove that the fire was not due to his fault. In fact, it was proved that the defendant had been in the habit of putting hot cinders from the fire into a wooden box placed near the trellis work on the verandah in the rear of the house It was also proved that the fire originated at this place on the verandah.

Moratorium for Premiums.

An attempt was recently made in England to secure by legislation a moratorium for life premiums and the fixed charges for the period of the war, and although unsuccessful, there is little doubt that a stronger attempt will be made later on. Whilst nobody will object to all possible relief

being afforded to such men, the Government must not allow itself to adopt a course of action which would be injurious to the other party to the contract, and therefore to the disadvantage also of the assured.

In cases where the policy itself can be held as security the need for a moratorium would never arise, as the offices would certainly be willing to keep the policies in force so long as the free surrender value covered the premiums due. Those who would benefit from a moratorium would therefore be the new policyholders and those who have borrowed "up to the hilt." There are obvious objections to applying legislation to meet those cases which would be at once fair and reasonable from the offices' point of view. Premiums are not recoverable at law, and offices which allowed accumulations would be without any means of ever obtaining the money, so that the proposal is of the "heads I win, tails you lose," variety under which an office would be called upon to pay a claim should death occur during the operation of the moratorium without having been paid premiums, whilst in the cases where no claim arose, the assured might, when called upon for payment, refuse to regard the unpaid premiums as a debt and cancel the insurance.—*Insurance Index.*

WHITE PHOSPHORUS MATCHES.

In the Parliamentary session of 1913-14 the Minister of Labor secured the enactment of a statute prohibiting the use of white phosphorus in the manufacture of matches, also prohibiting the importation, sale or use of matches made with white phosphorus. The statute came into operation on January 1, 1915, so far as concerned the prohibition or manufacture and importation of white phosphorus matches, but the prohibition of the sale and use of such matches did not become operative until one year later, January 1, 1916. During the present session the Minister of Labor has introduced a bill amending this statute. The Minister explained that, while importation and manufacture ceased on the date required by the Act, the additional period allowed for sale and use had proved insufficient to dispose of the stock of white phosphorus matches which had accumulated before the new law had become effective. This situation was thought to be an injustice, and the Minister's amending bill accordingly extends (a) until July 1, 1916, the period up to which white phosphorus matches may still be sold lawfully, and (b) until January 1, 1917, the period up to which white phosphorus matches may be used lawfully. The amending bill had not become law at the time of writing, but the measure had passed through the House of Commons and had received a second reading in the Senate.—*Labor Gazette.*

METRIC SYSTEM ADVOCATED.

The adoption of the metric system of weights and measures by Canada was urged in an address delivered by Leon Lorrain before the Montreal Chamber of Commerce recently. The secret of the German success in foreign markets, he contended, was due to the fact that they employed the metric system and stated the prices of their merchandise in the currency of the country to which they were exporting. If Canadian manufacturers are to capture the German foreign markets they must do the same.

The Canadian and the British manufacturer was at a distinct disadvantage by the use of an antiquated standard of weights and measures. There were two kinds of bushels, and bushels of different materials had different weights. There were several kinds of gallons, and gallons were divided into quarts and pints, with the result that it required much figuring, which always confounded the foreigner who was not familiar with our measures. There were two kinds of tons, and then there were other standards of weights, such as the stone, the pound, the ounce, the gram, the grain, etc., the whole confusing even to a Canadian or an Englishman and never thoroughly understood by the peoples to whom Canadians wish to export. As for the pound, shilling and pence system of currency, the speaker said it was an abomination. If the Empire were to make the strides in commerce that is needed and is expected after the war, it is necessary to use the metric system, which is simple, and which to-day is practically universal outside of the British Empire.

THE VALUE OF A SMILE.

Some time ago the *New York Sun* published the following dispatch from London.

"Alice John Hodges, of Chelmsford, who died some time ago and whose will was probated today, bequeathed $500 to Mrs. Walker, the wife of a bank cashier, for simply smiling pleasantly at the testatrix as they left church together. Mrs. Walker explained to-day that she sat near Miss Hodges in church and, as she came out, she smiled at her and exchanged a few pleasant words."

Commenting on this incident, the *Watchman-Examiner* of New York for December, 1915, said:

"Now, there is no market for manufactured smiles. Mrs. Walker smiled because it was in her heart to smile. She did not smile with a legacy in view.

"Smiles have brought to many richer legacies than Mrs. Walker received. They have brought the love and gratitude of burdened and lonely hearts.

"Smiles do not cost much, but they accomplish wonders.

"The other day we sat in a street car gazing into twenty faces burdened or sad or sullen. A mother came in with a little boy of three or four. He was a perfect picture of physical beauty. His little face was radiant. Suddenly he began to laugh. His mother tried to subdue him, but he kept on laughing.

"Gradually the men and women in the car began to thaw out, and after a while the whole company was smiling. The atmosphere of the car had changed.

"That little boy had wrought a transformation, and a score of weary men and women went home with lighter hearts.

"It hurt some of them to wrinkle up their faces into a smile, but after they had practiced a little they liked it."

GERMANY WILL LOSE A MONOPOLY.

The day of Germany's monopoly of the dye industry is past. The organization of factories in other countries, under Government support and with Government protection, insures a varied supply for the future. Japan has now entered the field.

The Japanese Government has voted a subsidy to all corporations and firms engaged in the manufacture of dyes, provided more than half of the capital is subscribed by the subjects of Japan. The artistic value of Japanese industries depends much upon dyes, and the supply heretofore has come mainly from Germany.

The amount of the subsidy will enable the companies to pay a dividend of 8 per cent. on the paid-up capital, and the subsidies will be for ten years. The manufacture of material for gunpowder will be regarded as manufacture of dyes and chemicals.

TARIFF

By J. R. K. BRISTOL

To Manufacturers Not Engaged in Export Business, But Who May Contemplate Such Developments:

Are you aware that you have the privilege of practically duty free materials for manufacturing for export? Full information on this matter can be obtained from the Customs Department, Ottawa; or from the Manager, The Tariff Department, Canadian Manufacturers Association, Toronto.

Made-in-Canada Goods for India.

A COMMUNICATION has been received at the Department of Trade and Commerce from Mr. H. R. MacMillan, Special Trade Commissioner, to the effect that Canadian goods exported to India should be plainly stamped with the words "Canada" or "Made in Canada," as the abbreviations for the different provinces are not familiar, and when used are frequently believed to be abridged forms for the names of American States. Marking goods in this way would have the further advantage of advertising Canadian industries, as it is not generally believed in India that Canada is an industrial country capable of producing, for example, manufactured metal articles. Several of the leading hardware and general supply merchants in Calcutta were surprised to learn that it was quite possible to secure any such manufactured goods from Canada as were ordinarily secured from the United States. This attitude towards Canada can only be removed, states Mr. MacMillan, by the prominent marking of such goods as are Canadian.

Belgium's Economical Necessities After the War.

The following list of articles which Belgium is expected to need after the war, and which Belgian business men will not feel inclined to buy in Germany, has been drawn up by Mr. Claes, the editor of a well-known Antwerp commercial newspaper:

Aluminum in sheet, kitchen articles.
Agricultural implements.
Auto cycles, trucks, automobiles, carriages, motor cycles, bandages.
Cash registers.
Electric pocket lamps.
Flour mills (installation of).
Graphite for piles.
Labels, small.
Meat chopping machines (with motor).
Morocco dressing.
Office furniture.
Sashwork.
Shoemakers' articles.
Spring beds.
Timber.
Vacuum cleaners.

Enemy Firms in Foreign Countries.

The Government of the United Kingdom, by Orders-in-Council, has prohibited "All persons or bodies of persons, incorporated or unincorporated, resident, carrying on business, or being in the United Kingdom from trading with any of the persons or bodies of persons mentioned in the list" following, viz.:

ARGENTINA AND URAGUAY.

Allgemine Elektricitats Gesellschaft.
Austro-American Steamship Co.
Barth, Eugenio & Co.
Bernitt, Rodolfo.
Bonino & Schroeder.
Buttini, Oxcar.
Brauss, Mahn & Co.
Boker & Co.
Bromberg & Co.
Bunge, Ernesto A., and Born, J., B. Mitre, 226, Buenos Aires.
Clarfeld, Federico & Co.
Clausen & Co.
Curt, Berger & Co.
Delfino Bros. (Delfino Hermanos).
Dorner, Arturo.
Dorner & Bernitt.
Florencio Martinez de Hoz & Co., Calle Reconquista, 43, Buenos Aires.
Funck, Ph., & Co.
Gasmotorenfabrik Deutz.
German Coal Depot Co. (Deutches Kohlen Depot).
Hamburg-American Steamship Co.
Hamburg-South American S.S. Co.
Hansa Line.
Hardt, Engelbert & Co.
Hardt, E. & W., Co.
Hardy, E., & Co. (formerly Hardy and Muhlenkamp), Buenos Aires and Rosario.
Hasenclever & Co.
Kropp & Co.
Lagemann, F., & Co.
Lahusen & Co.
Lasker & Co.
Marquez, Jose C.
Martinez de Hoz Bros., Calle Belgrano, 554 Buenos Aires.
North German Lloyd.
Orenstein & Koppel.
Osten & Cie.
Pintos, Domingo.
Quincke, Ernesto.
Rabe, Margarita N. de.
Rabe, Otto.
Rabe, Walder & Co.
Raplmeyer, C. C.
Rhodius & Co.
Roehrs, E. & Co.
Siemens Schuckert, Ltd., Cia de Maquinaria e Instalaciones Electricas.
Schelp & Schelp, Calle Bartolome Mitre, 1123 Buenos Aires.
Staudt & Co.
Strothbaum, G. M. O.
Scoiedad Anonima Argentina Hidraulico Agricola.
Societa Anonima Transporti de Mestre.
Svensson, Ohlson & Co.
Tribe, N. T.
Velazco, Pedro.
Vilmar, Rimplar & Co.
Wolff, Buchholz & Co.
Wagenknecht & Co.
Walder, Enrique.
Weil, Hermanos & Co., Buenos Aires.

BRAZIL.

Albuquerque, Antonio de.
Arp & Co.
Bayer, Frederico & Co.
Behrmann & Co.
Bellingrodt & Meyer
Berringer & Co.
Bockmann, A., & Co.
Bromberg & Co.
Bromberg, Hacker & Co.
Barza & Co.
Borstelmann & Co.
Casa Allema (Wagner Schadlich & Co.)
Companhia Commercial.
Costa Almeida, M.
Costa Ferreira & Company, Rua Sao Bento, 77 Sao Paulo.
Da Precedta, A. Alves.
Dannemann & Co.
Dauch & Co.
Diebold & Co.
Domschke & Co.
Engel-Fritz.
Engelhardt, Carlos.
Fonseca, Abilio.
Fischer-Christino.
*Fonseca & Co., Coal Merchants, Para.
Fraeb & Co.
Friedrichs & Timmans.
Gasmotorenfabrik Deutz.
Griesbach-Maz.
Hasenclever & Co.
Hoepcke, Carl & Co.
Hoffman, Rudolf W. H.
Jannowitzer, Wahle & Co.
Krause, Irmaos & Cia.
Landy, Carlos von.
Louro Linhares, Florianopolis.
Lemcke, Carlos & Co.
Monteiro, J. A. & Co
Moreira, Julio Cesar.
Magnus, James, & Co.
Meyer, Irmaos & Co.
Noronha, Carlos de.
Ottens, K. J.
Ohliger & Co.
Ornstein & Co.
Overbeck, W.
Poock & Co.
Pralow & Co.
Rombauer & Co.
Solheiro, Luiz.
Schneider & Co.
Schoenn, Roberto, & Co.
Scholtz, Manaos.
Semper & Co.
Sinner, Alfredo.
Studer, J. & Co.
Suerdieck & Co.
Telscher & Co.
Trommel, A. & Co.
Urban, Eugen & Co.
Vasconcellos, Jose de, & Co.
Vianna, Elyseo.

*Partners: A. Alnes Da Precedta, Para and Rio de Janeiro; Aleilio Fonseca, Para; Luiz Solheiro, Para.

Viuva, Carlos, Braus & Co., Florianopolis.
Wagner, Schadlich & Co.
Whitaker, Ernesto, & Co.
Willie, Theodore, & Co.

CHILI.

Daube & Co., Prate, 8 Valparaiso; Santiago: Concepcion and Antofagasta.
Folsch & Co., Casilla, 16a, Valparaiso.
Gildemeister & Co., Valparaiso; Lynch, 98 Iquique; Washington, 478, Antofagasta; S. Jose; Pena Chica; San Pedro.
Hardt, E. W., & Co., Valparaiso.
Kurtze, Walter, Punta Arenas.
Luck, Winkelhagen & Co., Valparaiso.
Manns, Ernesto, Punta Arenas.
Reitze, Leopold & Co., Valparaiso.
Schultz, Ricardo & Co., Coquimbo, Concepcion and Valparaiso.
Sloman & Co., Valparaiso.
Stubenrauch, R., Punta Arenas.
Trede, H., Punta Arenas.
Vorwerk & Co., Prate, 231-239, Valparaiso.
Weber & Co., Valparaiso.

DENMARK.

Allegemeine Elektricitats Gesellschaft, Vestergade, 23, Copenhagen.
Anglo-Russian Trading Co., Dron, Tuaerg, 3 Copenhagen.
Brennabor Filial, Tordenskjoldgade, 3 and Christian 9th Gade, Copenhagen.
Continental Caoutchouc & Guttapercha Co., Amaliegade, Copenhagen.
Copenhagen Coal and Coke Co., (Kjobenhauns-Kul-Koks-Kompagni A. S.) Islands Brygge, 22, Copenhagen.
Costa & Ribeiro, Copenhagen.
Dansk Russiske Handelsselskab, Copenhagen.
Goldstuck Hainze & Co., S. Annaepl, 16, Copenhagen.
Jensen, Albert, Islands Brygge, 22, Copenhagen.
Jensen & Fode Ny Vestergade, 7, Copenhagen.
Keil, Otto, Vesterbrogade, 28, Copenhagen.
Kraeft, Walter, Norregade, 7, Copenhagen.
Rothapfel, Max, Oestbaneg, 19, Copenhagen.

CUBA.

Barba, Vicente.
Berndes, J. F., & Co.
Eppinger, Albert.
Heilbut & Co.
Michaelsen & Prasse.
Paetzold, M., & Co.
Tillman, M., & Co.
Toennis, H.
Upmann, H., & Co.

ECUADOR.

Bartles, Carlos, & Co.
Bartles, Carlos (partner of C. B. & Co.).
Bartles, Guillermo (partner of C. B. & Co.).
Becdach, Hermanos.
Becdach, Kamal.
Becdach, Rene.
Behreint, Frederick .
Borchert, W.
Bunge, Julio.
Castro, Allen.
Dehmlow, Alfred.
Duve, Frederico.
Dassum, Mustafa.
Dierks, Hugo (partner of Otte & Co).
Donner & Blackett.
Donner, Roberto (partner of Donner & Blackett).
Enrich, Miguel.
Flemming & Schnabel.
Flemming, Geo. (partner of F. & Schnabel).
Grim, Juan.
Grimmer, Karl.
Guzman, L e Hijos.
Gleschen, Carlos (of Tagua Handelsgesellschaft, Manta Branch).
Haas, Max (of Tagua Handelsgesellschaft, Esmeraldas Branch).
Harnack, H. (of Tagua Handelsgesellschaft. Bahia Branch).
Hinnaoui, Hermanos.
Hinnaoui, Arif (or Aref) (partner of Hinnaoui Mermanos).
Hinnaoui, Azat (or Azzet) (partner of Hinnaoui Hermanos).
Hinnaoui, Fuad (partner of Hinnaoui Hermanos).
Heinert, Leonard.
Jeremias, L.
Jerimias & Borchert.
Jungnickel, W.
Jungnickel & Loose.
Jalil, (C) Hermanos.
Jalil, Cecilio (partner of C. Jalil Hermanos).
Jalil, Jorge (partner of C. Jalil Hermanos).
Jalil, Manuel (partner of C. Jalil Hermanos).
Kaiser, Guillermo.
Koppel, Samuel.
Kruger, Juan H.
Kruger & Co.
Loose.
Luders, Carlos.
Lopez, Romulo G.
Malheur & Co.
Maydoub & Ramadan.
Maydoub (partner of Madoub & Ramadan).
Miketa, Rodolfo (partner of Otte & Co.).
Moreira, Nicanor.
Moller, Herman.
Otte & Co.
Otte, Carlos & Co.
Patrel, J., & Hermanos.
Patrel, Juan (partner of J. Patrel Hermanos).
Patrel, Luis (partner of J. Patrel Hermanos).
Poppe, Adolfo.
Ramadan (partner of Maydoub & Ramadan).
Rickert, Carlos.
Rickert, Edward.
Rickert, Enrique.
Rickert & Co.
Rischanek, Max.
Ruperto, Emilio.
Schnabel, A. (partner of Flemming & Schnabel).
Tagua Handelsgesellschaft, M.B.H. (all branches).
Tresselt, W. (of Tagua Hadelsgesselschaft, Bahia Branch).
Urban, Gustavo.
Voelcker, Carlos.
Yauch, Theodore (of Tagua Handelsgesellschaft, Esmeraldas Branch).
Zohrer, Adolfo.

GREECE.

Antovitch, Pierre, Chios.
Back, Karl, Athens, 13 Rue de L'Universite.
Barouh, Solomon & Levi, Volo.
Bensussan, D., Piraeus.
Block, Eugene, Piraeus.
Brazzafoli, Domenico, Syra.
Constantacopoulos & Co., Patras.
Damas, Constantine, Calamata.
Defner & Edelmann, Athens.
Dimitrelias, John, Vathy, Samos.
Fels & Company, Corfu.
Frandzis, P., & Fiorentino, G., Vathy, Samos.
Galanis & Goldstein & Hadjiandreou, Samos.
Goldstein, Albert, Volo.
Gromann, George, Athens.
Gromann, George, Athens.
Hampartchoumian, Aram, Athens and Manchester.
Harr, Gustave, St. Theodore Sq., Athens.
Heidmann, Hans, Salonica.
Hoffmann, Alfred, Piraeus.
Koenig, I. & H., & Co., Athens.
Kourametis, Michael, Athens and Calymnos.
Kourametis, Pandelis, Athens and Calymnos.
Kruger, Max, Canea.
Michaelides & Milch, Panghion Hotel, Athens and Piraeus.
Muller, Karl, Patras.
Lochner, Max, Patras.
Lucas & Company, Patras.
Ornstein, Doctor Otto, Chios.
Schiffel, Helmuth, Volo.
Seefelder & Co., Salonica.
Spiliotopoulos, C., Patras.
Stoltenhof & Lucas, Patras.
Stringos, George, Piraeus.
Wein, Jacob, Canea.
Zahn, Henry, Calamata.

JAPAN.

Aachen & Munich Fire Ins. Co., care Simon Evers, 25 Yamashita-cho, Yokohama; 100 Yedo-Machi, Kobe.
Accumulatoren Fabrik Aktien Gesellschaft, 32B Tsukiji, Tokyo.
Ahrens, H., & Co., Nachf, 29 Yamashita-cho, Yokohama; 10 Bund, Kobe.
Bayer, F., & Co., 183 Yamashita-cho, Yokohama; 47 Akashimachi, Kobe.
Becker & Co., 89B Yamashita-cho; 31 A Akashimachi, Kobe.
Benicke, F., Nachf, 5, Honkawaya-cho; Nihonbashi-ku, Tokyo; 81 Kobe.
Berg, Werner, 4 Shichome Nakayamatedori, Kobe.
Bergmann & Co., 154 Yamashita-cho, Yokohama; and 40 Akashimachi, Kobe.
Belifus, F. R., 92 Yamishita-cho, Yokohama.
Boeddinghans, C. E., 4 Deshima, Nagasaki.
Bohler Keit Goshi Kaisha, Nakanoshima, Osaka, and 3 Uchisaiwaicho, Tokyo.
Borkowsky, G., 169 Sannomiyacho, Itchome, Kobe.
Bretschneider & Co., 160A Yamashita-cho, Yokohama.
Carlowitz & Co., 124 Higashi-machi, Kobe, and 11 Isogami-Dori, 5 Nichome, Kobe.
Casella Senryo Kaisha, Murai Bldg., Ninonbashi-ku, Tokyo, and 31a Akashi-Machi, Kobe.
China Export, Import & Bank Co.
Club Concordia, 117 Itomachi, Kobe.
Club Germania, 235 Yokohama.
Delacamp & Co., 121 Higashi-machi, Kobe.
Delacamp, Piper & Co., 202 Yamashita-cho, Yokohama, and 70 Kyomachi, Kobe.
Deutsch-Asiatische Bank, 180A Yamashita-cho, Yokohama, and 25 Kyomachi, Kobe.
Evers, Simon & Co., 25 Yamashita-cho, Yokohama, and 101 Yedomachi, Kobe.
Fachtmann & Co., R., 45 Yamashita-cho, Yokohama.
Feicke & Co., J., 80 Kyomachi, Kobe.
Gartner-Gebruder, Otaru, Hokkaido.
Geisher & Gilbert, Ltd., Surugadaishita, Tokyo.
Gutmann, E., Yayesucho, Itchome, Tokyo.
Hirschfeld, G. C., 43 Sannomiya-cho, Kobe.
Hoffman, F., Kobe.
Illies, C., & Co., 54 Yamashita-cho, Yokohama; 12 Bund, Kobe; 15 Tsukiki, Tokyo; 40 Kitahama, Sanchome, Osaka & Moji.
Kobe Dispensary (Deutsche Apotheke), 16 Harima-Machi, Kobe.
Langfeldt & Co., 73 Yamashita-cho, Yokohama.
Lessner, S. D., 35 Nakamachi, Kobe; 6 Megasaki, Nagasaki.
Levedag, E., 4 Yurakucho, Itchome, Tokyo.
Leybold, Shokwan, L., 26 Himonocho, Nihonbashi-ku, Tokyo; 29 Nishi Hommachi, Moji.
Liesecke, J., 80 Kyomachi, Kobe.
Meier & Co., A., 24 Yamashita-cho, Yokohama; 68 Kyomachi, Kobe.
Munster, B., 23 Yamashita-cho, Yokohama.
Normal Dispensary, 77D Yamashita-cho, Yokohama.
Oestmann & Co., A., 196 Yamashita-cho, Yokohama, and 47, Kobe.
Oldenburg, E., 49 Harimamachi, Kobe.
Piper & Thomas, 202 Yamashita-cho, Yokohama.
Peitzker, W., 45 Yamashita-cho, Yokohama, and 17 Mayemachi, Kobe.
Ramseger & Co., 17 Mayemachi, Kobe.
Raspe & Co., M., 91 Kitamachi Kobe; 18A Tsukiji, Tokyo.
Ratjen, Rud, 122 Aoyama Minamimachi Rokuchome, Tokyo.
Reimers, Otto & Co., 198 Yamashita-cho, Yokohama.
Retz, F., 214 Yamashita-cho, Yokohama.
Retz, F., & Co., 214 Yamashita-cho, Yokohama.
Ritter, W., P.O. Box 234, Yokohama.
Romisch, Leo, 33 Tsukiji, Tokyo.
Rohde & Co., Carl, (Japan Export Co.), 70A Yamashita-cho, Yokohama; 104 Yedo-machi, Kobe.
Schmidt, Scharff & Co., R., 52 Yamashita-cho, Yokohama.
Shoten, Schmidt, 1 Yayesucho, Itchome, Kojimachi, Tokyo.
Schramm & Co., Paul, 21 Yurakucho Itchome, Kojimachi, Tokyo, and Ono Hamabeduri, Kobe.
Schuchardt & Schutte, 1 Yurakucho, Itchome, Kojimachi-ku, Tokyo.
Siemens Schuckert Denki Kabushiki Kaisha, 65 Bojima Hamadori, Osaka; 48 Akashicho Tsukiji, Tokyo; 130 Tsutsui-cho, Kobe and Moji.
Van Nierop's L., Japan Trading Co., 39 Akashimachi, Kobe, and 153 Yamashita-cho, Yokohama.
Vehling & Co., 92 Yamashita-cho, Yokohama.
Vogt, Carl, Dr., 67 Yamashita-cho, Yokohama.
Weinberger & Co., C., 46 Yamashita-cho, Yokohama, and 76B Kyomachi, Kobe.
Wilckens, A., 45 Yamashita-cho, Yokohama.
Winckler & Co., 256 Yamashita-cho, Yokohama; 100 Yedomachi, Kobe; 2 Minami Konyamachi Tokyo, and 9 Shumokumachi Sanchome, Nagoya.
Wolf, Hans, 81 Nakamachi, Kobe.
Wolter, Carl & Co., Honmachi, Chemulpo, Corea.
Zeiss, Carl, 33 Tsukiji, Tokyo.

MOROCCO.

Abdeluhab Asharuel, Arzila.
Abdelwahab Tazzi (Tazi), Laraiche.
Abdeslam El AmriZailachi, Laraiche.
Abdeslam el Hossein, Tetuan.
Abdeslam, Harrak, Alcazar.
Abithol, Moses, & Sons, Laraiche.
Ali ben el Hadj, Arzila.
Allah Boujnah, Alcazar.
Amar, Mesod J., Laraiche.
Beniflah, Elias, Laraiche.
Beniflah, Judah M., Laraiche.
Benros, Isaac, Laraiche.
Bensebat, Jacob, Laraiche.
Bensheton, Moses, Laraiche.
Brandt & Toel, Marrakash.
Benchimoni, Abraham, Alcazar.
Cohen, Simon & David, Laraiche.
Cohen, Simon & Joseph, Laraiche.
El Ayashi el Bakkali, Arzila.
Eljarret, Saloman, Laraiche.
Essoudry, Samuel, Laraiche.
Hadj Mailoud eo Soussi, Laraiche
Hadj Mohamed Ben Abdullah, Alcazar.
Hemed Ben El Hashmi, Arzila.
Hemed El Mzanzi, Laraiche.
Houssian, E. Soussi, Laraiche.
Huss, Reichardt (Ricardo), Arzila.
Jahn (or Yahn) & Toledano, Laraiche.

Kell, J., & Co., Laraiche.
Mohammed, Lazrac, Alcazar.
Mohammed, Bakkali, Tetuan.
Mohammed, Ben el Hashmi, Arzila.
Mohammed, Ben el Sherti, Arzila.
Mohammed, Ben Hisu, Arzila.
Mohammed, Berrada (Ahmed Berrada), Alcazar.
Mohammed, el Hababi, Laraiche.
Mohammed, el Mudden, Tetuan.
Mohammed, Lebady, Tetuan.
Mohammed, Sherti, Tetuan.
Mohammed, Sid Mokhar, Arzila.
Mokluf, Sabbag & Co., Laraiche.
Moryusef, Fortunate S, Laraiche.
Mose el Jarrat, Alcazar.
Muyal, Isaac & M., Laraiche.
Oldenburg Line.
Pariente, Moses J., Laraiche.
Pariente, Hermanos, Laraiche.
Renchausen, A., & Co., Laraiche.
Rohner, Werner, Laraiche.
Saeger & Woerner, Laraiche.
Steinkampf, H., Alcazar.
Taib Mohammed, Tetuan.
Tornow, Max & Son, Tetuan.
Ulad Sid Mokhtar, Arzila.

NETHERLANDS

Aker, P., Andijk.
Algemeen (N.V.) Commissie Handels Bureau, Nieuwe Uitleg 6, The Hague.
Asteroth, Friedr, Rotterdam.
Allgemeine Electricitata Gesellschaft, Amsterdam.
Bosschaert, W. & R. Van Dieren, The Hague.
Birnbaum, S. & W., Singel 160, Amsterdam.
Bosnak, Herman, Wouwermanstraat 38, Amsterdam.
Bosnak, Michael, Nieuwe Heeremgracht 151, Amsterdam.
Bacher, August & Sons, Wijnhaven, Z. Z. 198, Rotterdam.
Bocker, L. & Co., Postbus 78 and Bompjes 39a, Rotterdam
Bakker, S. W., Ymuiden.
Borner, C. A. A., 30 Nicolas Witsenkade, Amsterdam.
Brands, Th. E., Rokin 85, Amsterdam.
Brasch & Rothenstein, Heering 320, Amsterdam, and Boompjes 40a, Rotterdam.
Chirurgische Instrumentenfabriek (v|h Loth & Stopler), Trans L. Utrecht.
Cohen-Goldschmidt, Oldenzaal, Holland.
Continental Caoutchouc & Gutta Percha Co., Prinsengracht, 1007, Amsterdam.
Delden, Simon, Seinpostduin, 22; Havenkade, 47, Scheveningen.
Delden & Blitz, Seinpostduin, 22; Havenkade, 47, Scheveningen.
Blitz, Seinpostduin, 22; Havenkade, 47 Scheveningen.
De Ruijter & Co., Linke Rottekade, 145 Rotterdam.
De Poorter Joseph, Veerkade 83, Roterdam.
Deventer, Glas Maatschappij Voorheen J. Pouwels Coilingh (N.V.), Deventer.
Drost, Robert, Terneuzen.
Drudderij (N.V.), v|h Henri Berger, Bois De Duc., Holland.
Duncan Doring, E., & Co., (Now Weinberg, E. & Co.), 51-53 Coolsingel, Rotterdam.
Elberfelder Handels & Export Co., N. E. Voorburgwal, 58-60 & Spuistr 31-33, Amsterdam.
Erdman & Hethey, Amsterdam.
Eils, Joseph, Maaskade, 164, Rotterdam.
Frankfurter, A. G., fur Rhein & Main Schiffahrt, Rotterdam.
Fischer, A., Amsterdam.
Fischer, Bernard, Amsterdam.
Fischer, Leon, Amsterdam.
Fischer, Maurice, Amsterdam.
Grootkerk, S., Junior, Linnaenstraat, 45, Amsterdam.
Goldstuck-Hainze & Co., Amsterdam.
Hanno, Heinrich, Nieuwland 4, Rotterdam.
Itschert & Co., Coolsingel 33, Rotterdam.
Koch & Co., Transport Gesellschaft, Rotterdam.
Koenigsfeld, J. H., Willemakade 20, Rotterdam,
Kruthliffer & Doll, 8 Veerkade, Rotterdam.
Kan, A. Jzn., Blasinss-straat, 1, Amsterdam.
Klop, P. W. H., Raadhuisstraat, 18, Amsterdam.
Komeet, N. V. De v|h Dumoncean Freres, Kanaaldjik, St. Pieter, near Maastricht.
Konig, H. W. & Co., Paul Krugerstraat. 8. Rotterdam.
Lamm Bros., Weteringschaus 84, Amsterdam.
Lichtenstein, M., Leuvehaven, 34b, Rotterdam.
Maier C. C., Act., Gesellschaft, Rotterdam.
Mannheimer Lagerhaus Gesellschaft, Pr. Hendrikkade 160A, Postbus, 482, Rotterdam.
Manders, Seeman & Co., Heeren gracht 442, Amsterdam.
Mayer & Co., 38B Westerstraat, Rotterdam.
Meiger & Co., Stationsweg, E. 99, Velseroord.
Monnickendam, D., Zomerhofstraat, 71B, Velseroord.
"Metropol" Gasgloeilichtfabriek (Gloeikousjesfabrik) Parkstraat 15, Arnhem.
Mijnbouw Maatschappij Aequator, Thereiastraat 109, The Hague.
Mohrmann, J., & Co., Handels Vereeniging Vorheen, Keistersgr 203, Amsterdam.
"Monopol" Gasgloeilichtfabriek, 487 Prinsengracht, Amsterdam.
Nederlandsche Papierhandel, 526 Prinsengracht, Amsterdam.
Neue Karlsruher Schiffahrts Act., Gesellschaft, Rotterdam.
Norden, J., Stationsweg 43, Rotterdam.
Ossedrijver, E., Leuvehaven 55, Rotterdam.
Ozonwerken "Nederland," Schiedam.
Poortershaven Handelsinrichtingen, Rotterdam.
Roland Transport A. G., Rotterdam.
Richter, F. A., & Co., Stationsweg 24, Rotterdam.
Rhein & See Schiffahrts Gesellschaft, Rotterdam.
Rhein & See Speditions Gesellschaft, Rotterdam.
"Rhenus" Transport G.m.b.H., Rotterdam.
Schenker & Co., Oorlandstr 49, 51, Rotterdam.
Schwedersky & Co., 5 Gravendijkwalloo, Rotterdam.
Seiler, F. A., Damrak 49, Amsterdam.
Steenkolen Handelsvereeniging, Boompjes, Rotterdam.
Stolberg, Jn. (J. E.) & Co., Amsterdam.
Swarttouw's (Cornelius) N. V. Stevedoring Co., Achterhaven, 74A-B, Rotterdam.
Steinweg, C., Boompjes, Rotterdam.
Strassburger Rheinschiff Gesellschaft, Rotterdam.
Tas, I. J., Ezn, Nienwendijk 197-9, Amsterdam.
Transport Kontor "Berglete," Rotterdam.
Utrechteche Handelsvereeniging, Lange Nieuwster 41, Utrecht.
Van Dam, C. W. H. & Co., Mathenesserlaan 235, Rotterdam.
Van der Schuijt, J. & A., Maaskade O. Z. 30, Rotterdam.
Voogt, A. de, Prinsenstraat 65A, Amsterdam.
Verein Spediteur & Schiffer Rheinach A. G. Rotterdam.
Voss & Langen, Pr. Hendrikkade 82A, Rotterdam.
Vulcaan Coal Co., Veerkade 6, Rotterdam.
Vulcaan (N. V.) Handels en Transport Maatschappij, Veerkade 6, Rotterdam.
Wambersie & Son, Oalandstraat 5, Rotterdam, and de Ruyterkade, Amsterdam.
Weigman's Bank, Amsterdam.
Weinberg, F., & Co., (formerly Duncan Doring, E., & Co.) 51-3, Coolsingel, Rotterdam.
Weismann, Charles, Haagschveer 35A, Rotterdam.
Wurdemann, L., Heerengracht 158, Amsterdam.
Zietschmann, M., Maastraat 176, Rotterdam.
Zuid-Hollandsche Elektrische Blikdrukkerj Speelgoed & Emballage Fabriken Co. (J. Norden), 43, Stationsweg, Rotterdam.
Zuid-Hollandsche Gloeikousjesfabriek Schiedam.

NETHERLANDS EAST INDIES.

Adler, Waranjuis, Sourabaya.
Auerbach, H., Oxe & Co., Sourabaya.
Barmer Export Gesellschaft, Batavia.
Behn Meyer & Co., Ltd., Batavia & Sourabaya.
Biedermann & Co., Samarang & Sourabaya.
Birnbaum, S. & W., Kali Bisar West, Batavia.
Braunschweigsche Maschinenbauanstalt, Sourabaya.
Breitfeld, Danek & Co., Sourabaya.
Eckstein, P., Medan & Palembang.
Ehrlich, S., Medan & Palembang.
Engelen Filamout & Co., Menado
Erdman & Sielcken, Samarang, Batavia and Sourabaya.
Giesbers & Rosenkrantz, Sourabaya.
Goldenburg & Co., Medan & Palembang.
Guntzel & Schumacher, Handelsmaatschappij, Medan, Palembang and Sumatra.
Gumprich & Strauss, Batavia.
Hallerman, Medan and Palembang.
Hennemann, R., & Co., Dutch Borneo and Batavia.
Hinlopen, K. & Co., Sourabaya.
Jongeneel, Medan.
Katz, S., & Co., Medan & Palembang.
Kehding, F., Medan and Palembang.
Kolner, Handelsgesellschaft, Sourabaya.
Koppel, Arther, Sourabaya.
Ledeboer, W. B. & Co., Macassar, Menado and Gorontalo.
Liebenschutz & Co., Samarang and Sourabaya.
Lind, J. A., Handelsvereeniging, Medan, Palembang and Sumatra.
Louvre, Sourabaya.
Mohrmann & Co., (Hamdelsvereeniging Voorheen J. Mohrmann) Macassar.
Naeseens & Co., Sourabaya and Medan.
Ong Kek Chia, Batavia.
Ong Kek Siang, Batavia.
Ong Seng Kwie, Batavia.
Orenstein & Koppel, Sourabaua.
Ott. E., Medan and Palembang.
Oving, H. E., Sourabaya.
Pang Kie Ngan, Batavia.
Prottel & Co., Sourabaya.
Reichler & Co., Medan and Palembang.
Schlieper, Carl & Co., Samarang.
Siemens Schuckert Werke, Sourabaya.
Siemens & Halske, Allgemeine Gesellschaft, Sourabaya.
Societe Coloniale Indo-Belge, Batavia.
Sourabaya Oliefabriek, Sourabaya.
Straits und Sunda Sundikat, Batavia.
Valk, G. H., Macassar.
Vankhee, Macassar, Menado and Gorontalo.
Vlielander Hein & Co., Batavia.
Wolf & Petschek, Sourabaya, Samarang and Java.

NORWAY.

Allemeine Electricitats Gesellschaft, Christiania.
Anderson Brodrene, Sarpsborg.
Bergens Bliktrykkeri A.|S., post-box 134; and Damsgaard, Bergen.
Brun, Joseph Jervel, Grand Hotel, Christiania.
Bohm, J. M., Christiania.
Broderson, J., (Dental Co.), Christiania.
Bryde, Johan, Sandefjord.
Christiania Filfabrikfile, Christiania.
Christiania Textilfabrik, Chr. Krohgsgt., 3, Christiania.
Dental Co. (J. Broderson), Christiania.
Fiskegarnsfabrik, Christian IV's gade, 89 and 91, Kristianssand.
Gimle Oliemolle, Sandefjord.
Groset, Hans, N., Soltsg 21, Christiania.
Haak, L. & Co., Elveg, 5, Christiania.
Heilmann A. (Christiania Filbabukfile), Christiania.
Hinsch, Rudolf, Sandefjord and Bergen.
Hjelte, Carl, Grand Hotel, Christiania.
Jacobsen & Braastad, Tolbodgt, 35, Christiania.
Johannesen, Albert, Chr. Krohgsgt, 3, Christiania.
Kroepeliens, C., Enke, A.|S, Bergen.
Lassen, Carl, St. Strandgt 1, Christiania.
Larsen, Oscar, Aalesund.
Londoner Bazar, Strandgt, 29, Bergen; Trovgt, 176, Christiania.
Mortensen, Th., Prinsensgt, 2b, Christiania.
Moller, E. D., Tolbrodgate 3, Christiania.
Motzfeldt & Sanner, Toldbodgt 30, Christiania.
Munchs, Cornelius, Efterfolger, Dronningensgt., 13, Christiania.
Nilsen, Helen, Olaf Kyrresgd, S. Bergen.
Norsk Elektrokemisk A|S., Toldbodgt 35, Christiania, Kragero and Dalfoss.
Olsen, Wilkelm, A|S, Strangdt 95, Bergen
Prosch, Carl B., Prinsensgt 23, Christiania.
Pein & Hartmann, Kirkegt, 17, Christiania.
Rusten, Erik, Sarpsborg.
Rubenstein, O., Strandgt., 29, Bergen; Torvgt., 176, Christiania.
Staudenmann, Karl, F. O. I., "Box 147," Trondhjem and Kragero.
Schlytter A|S., Skippergt., 19, Christiania.
Stavanger Sardine Co., A|S., Stavanger.
United Sardine Factories, Bergen; Jelseg 45 and Lervik, Stavanger.
Usines Electrochemiques de Hafslund, Sarpsborg.
Vendelboe, John & Carl, Prof. Dahlgatan 3, Christiania.
Von Krogh, G. F., Sandefjord.
Wall, Jacob, Prinsengt 23, Christiania.

PERSIA.

Abdul Rahim Arab.
Agha Muhammad Ismail Isfahanil Meshed.
Agha Muhammed Yusuf Khabbez Beglaroff, Kazvin.
Amin-ut-Tujjar (Alias Agha Isfahansi), Ispahan.
Baue, Tehran.
Bonati (Schwerin), Tehran.
Christodoroff, Zares, Resht.
Eger Bros., Meshed.
Farbwerke vorm. Meister Lucius & Brunig, Ispahan.
Fars Co., Shiraz.
Haji Abbas Arab, Ispahan.
Haji Amin, Ispahan.
Haji Goulam Hussein, Sons of, Resht.
Haji Lutfali Tabrizi, Tehran.
Haji Muhammad Reza, Ispahan.
Haji Mihammad Ibrahim (Makik-ut-Tujjar). Ispahan.
Haji Muhammad Ibrahim Tehrani Sakkonl. Tehran.
Haji Muhammad Welinkani, Kerman.
Haji Saleh Arab, Successors of, viz.-Haji Amin, Haji Mohammed Reza & Zafar, Ispahan.
Herold M. Meshed.
Hoffman, Meshed.
Ismaloff (Georged & Jean), Kazvin.
Keprielli Meshed.
Lascarides Freres, Resht.
Maison Hollandaise (Prins, C. F.), Tehran.
Malik-ut-Tujjar (Haji Muhammed Ibrahim). Ispahan.
Meshedi Goulam Ali, Resht.
Minassiantz, A., Tehran.
Mir Abdul Baghi & Sons, Kermanshah.
Missirian, Kerman.
Muhammed Mehdi Samsar Isfaman

Muhammed Saleh, Resht
Mustafa Husseini, Tehran.
Papadopoulo, Hariles, Resht.
Pascalidi Freres, Resht.
Persische Teppiche A G, Ispahan.
Prins, C. F. (Maison Hollandaise), Tehran.
Roever, Wilhelm, Shiraz.
Sadik Afshar, Yezd.
Safa & Co., Ltd., Bushire.
Seskiel Nawi, Tehran.
Societe du Tombac, Ispahan.
Tabibian, M., Resht.
Tehallis, Demetri, Resht.
Tehallis, Leandros, Resht.
Tehallis, Sotiri, Resht.
Wassmuss.
Wonckhaus & Co., Bushire.
Yavash Oghli, Resht.
Zafar, Ispahan.

PERU.

Brahm y Cia.
Casa Grande Zuckerpflanzen Aktien Gesellschaft.
Emmel, Hermanos.
Gildemeister Siegfried.
Gildemeister & Co.
Gulda, F., & Co.
Hardt, Engelbert & Co.
Hardt, E. & W., & Co.
Hassler & Michaelson.
Hilman.
Justus, W.
Kling, S. & Co.
Knell, H.
Oeschsle, A. F.
Sociedad Industrial Infantas, Ltd., Lima.
Weibe, F. & Co.
Weibe, S.
Welsch, G. y Cia.

PHILIPPINE ISLANDS.

Behn, Meyer & Co., Ltd., Manila.
Dy Buncio & Co.
Fressel & Co., Manila.
Froehlich & Kuttner, Iloilo.
Germann & Co., Manila.
Hashim, N. T. & Co., Manila.
Los Helios, Manila.
Menzi, J.
Manila Import Co. (Basmarina 107), Manila.
Richter, Adolpho & Co.
Roensch, Alfred & Co.
Santos & Jahrling (Botica de Santa Cruz), Manila
Schmidt & Ziegler (David 64), Manila.
Schultz & Co., Manila.
Secker & Co. (Seckers Store), Manila.
Stahl & Rumcker, Manila.
Struckmann & Co., (S. Vincenta 65), Manila.
Vieglemann & Co., Manila.

PORTUGAL.

Allegemeine Electricitats Gesellschaft (Thomson Houston Iberica), Rua Candida Dos Reis, 100 Oporto.
d' Almeida, A. Nicolau & Co., Ltd., Rua Serpa Pinto, Villa Nova de Gaya, Oporto.
Adler, Viuva de Hermann, Rua dos Fanqueiros 84, Lisbon.
Allegmeine Elektricitats Gesellschaft, Lisbon.
Bachofen, A. & H. Lehrfeld, Rua Nova de S. Domingos 22, Lisbon.
Bayer, F., & Co., 139 Rua das Flores, Oporto.
Breymann, A. Von., Maderia.
Brucher, Ch. Commandita, 295 Rua de Cedofeita,, Oporto.
Burmeister, J., Rua do Arco Bandeiria 39, Lisbon.
Burmeister, Herman & Co., 87 Rua Infante D. Henrique, Oporto.
Burmeister, J. W. & Co., 39 Rua de Bellomonte, Oporto.
Camacho, L. F., Funchal, Madeira.
Carvalho, R. H., Rua do Arco Bandeira, Lisbon.
Cast, H. F., Rua da Alfandefa 160, Lisbon.
Cesche, E., Madeira.
Cobo, Ramon, Rua do Commercio 28, Lisbon.
Daehnhardt & Co., Rua da Magdalena 75, Lisbon.
Deutsches Kohlen Depot, Madeira.
Duetting & Gaa, Madeira.
Edelheim & Co., Travessa dos Congregados, Oporto.
Ernst, George, Successors, Rua da Prata 8 Lisbon.
Furbringer & Co., 189 Rua de Passos Manuel, Oporto.
Gomes de Amorim, Praca de Restaurandoes 53, Lisbon.
Guedes, Eduardo, Guedes, Felisberto, Rua Augusta 124, Lisbon.
Hofle, Adolph, & Co., Rua do Ferreira Borges, Oporto.
Hahnfelde & Gellweiler, Praca Duque da Terceira 4, Lisbon.
Heise, Georg, Escadinhas da Saude 2, Rua do Commercio 35, Lisbon.
Herold, O., & Co., Rua da Grata 14, Lisbon and Oporto.
Hoffmann, Viuva Oswald, Calcada do Correio, Lisbon.
Issel, Fr., Rua da Conceicao 60, Lisbon.
Jacobi, N., & Co., Rua Nova Alfandega 76, Oporto.
Kendall, Vasconcellos & Passos, Lim., Galleria de Paris 11, Oporto.
Kamp, Thurmann & Co., 38 Rua Elias Garcia Oporto.
Katzenstein, Ed., Succrs., Rua de Bellomonte 39, Oporto.
Katzenstein, Hermann, Rua dos Fanqueiros 65, Lisbon.
Kretzchmar, R., Madeira.
Leuschner, Bernard, Rua Infante de Henrique 63, Oporto.
Lyncke, Traugott, Rua da Conceicao 85, Lisbon.
Mattos, Antonio, Lisbon.
Mendes, Jose, Oporto.
Mendes, A., Lisbon.
Martins & Galla, Ltd., Largo de S. Domingos 11, Lisbon.
Marum, Wm., Funchal, Madeira.
Marcus & Harting, Rua dos Fanqueiros 136, Lisbon.
Peres, Jose, Rua de Alrecrin 73, Lisbon.
Pfeill, Emil, Rua Formosa 400, Oporto.
Rothes, Carlos, Rua de Bellemonte 89, Oporto.
Reinhardt, Ricardo, Rua da Alfandega 118, Lisbon.
Servico, Costeiro a Vapor, Lisbon.
Schmidt, A., Funchal, Madeira.
Schmieder, Oswald, Rua Nova do Almada 11, Lisbon.
Schimmelpfeng & Co., Rua de Santa Justa, Lisbon; Rua das Carmelites 100, Oporto.
Siemens, Schuckert Werke, Limitada, Rua Augusta 27, Lisbon.
Silva, Francisco Eduard Moreira da, Avenida Casal Ribeiro 17-3, Lisbon.
Sociedade Insulana de Transportes Maritimos, Ltd., Funchal, Madeira.
Streit, Otto Von, Funchal, Madeira.
Stuve, W., & Co., Rua de Infante D. Henrique 75, Oporto.
Taylor, Filippe, Rua Vieira da Silva 19, Lisbon.
Timm, Charles, Rua da Prata 8, Lisbon.
Van Perlstein & Co., Rua de Conceicao 70, Lisbon.
Waltz, F., Funchal, Madeira.
Wald, G., Rua de S., Francisco 4, Oporto.
Wegehenkel, Arthur, Rua das Condominhas, Oporto.
Weinstein, Martin, & Co., Rua do Commercio 49, Lisbon.
Wiedemann, Max, & Co., Rua da Prata 108, Lisbon.
Wimmer, J., & Co., Rua da Magdalena 45, Lisbon.
Wischmann, Otto, Largo do Corpo Santo 6, Lisbon.
Worm, Luiz B., Rua da Afandega 160, Rua da Prata 133, Lisbon.
Ziems, Otto, Rua do Commercio 99, Lisbon.

PORTUGUESE EAST AFRICA.

Almeida, Porto Amelia, Palma and Ibo.
Arabi Moosa, Porto Amelia, Palma and Ibo.
Becker, E., Beira.
Behrens, H., Lourenco Marques.
Bettman & Kupfer (East Afr. Agency), Lourenco Marques.
Bosselmann, C., Beira.
Bradenkamp, Lourenco Marques.
Bruckmann, Lourenco Marques.
Cruz, Alipio, Francesco.
Da Souza, Luiz Moreira, Palma, Ibo and Porto Amelia.
Deuss, Paul.
De Sousa, Bismark, Palma, Ibo and Porto Amelia.
Dencks, Alexander, Lourenco Marques.
Deuss, Ludwig & Co., Chinde, Tete and Quelimane.
Deutsche Ost-Afrika, Gesellschaft.
Deutch Ost-Africa Linie.
Ferreira, C. A., Chinde.
Felgenhauer (alias Ferguson) I. C., Lourenco Marques.
Ferguson (alias Felgenhauer), I. C., Lourenco Marques.
Fellman, H., Quelimane.
Ferreira, Joaquim, Quelimane.
Figuereido Antonio, Palma, Ibo and Porto Amelia.
Frankel, Jacobs, Lourenco Marques.
Fuchs, Lourenco Marques.
Grothkop, H., Lourenco Marques.
Habib, Jacob, Porto Amelia, Palma and Ibo.
Haberer & Co.
Herz & Schaberg.
Heuffer, A., Quelimane.
Hoffman, Hugo, Lourenco Marques.
Hoffman, Oswald.
Houben, Walter, Beira.
Hupfer, Beira.
Ismail, Juma, Porto Amelia, Palma and Ibo.
Jung Lenz & Co.
Koch, J. H., Lourenco Marques.
Krutsfeldt, H. G., Lourenco Marques.
Kunsti, T., Ibo.
Limbrock, H., Tete.
Linder, F., Ibo.
Loeffelbein, F., Lourenco Marques.
Mebel, Beira.
Marcus & Harting.
Neider & Co., P., Ibo.
Neider, Paul, Palma, Ibo and Porto Amelia.
Oldenburg, E., Palma, Ibo and Porto Amelia.
Orenstein, Arthur-Koppel.
Pechner, H., Beira.
Petersen, R. H., Quelimane.
Pfister, F., Lourenco Marques.
Philippi, William, & Co.
Piel, Albert, Lourenco Marques.
Porst, Kurt., Lourenco Marques.
Ranchodas, Oda, Palma, Ibo and Porto Amelia.
Ressmann, I., Lourenco Marques.
Reuter, Dr., Lourenco Marques.
Rewald, Martin, Lourenco Marques.
Ribeiro, Antonio Franciso, Beira.
Rolfes, Herman, Lourenco Marques.
Rolfes, Karl, Lourenco Marques.
Rolfes, Nebel & Co., Lourenco Marques.
Rosendorf, Lourenco Marques.
Ragehand, Premchand, Mozambique.
Serrinha, J. A., Ltd., Chinde.
Sambado, Antonio Marques, Mozambique, Santa Maria, Palma, Ibo and Porto Amelia.
Schnutz, H., Tete.
Schreiber, Beira.
Siemsen, T., Beira.
Springhorn, C., Lourenco Marques.
Steyn, Kuhn, Lourenco Marques.
Stuben & Co.
Studldreier, Palma, Ibo and Porto Amelia.
Vogel, W., Lourenco Marques.

SPAIN.

Ahlers, Jacob, Santa Cruz, Teneriffe.
Amann & Gana, Auala 1 and Calle Belosti 14, Bilbao.
Arozena, Fernando, Santa Cruz, Teneriffe.
Arroya, Jose, Atocha 4, Malaga.
Augener, Enrique, Las Palmas.
Agencia Maritime Hering, Dormitorio San Francisco 7, Barcelona.
Allgemeine, Erzgesellschaft, Seville.
Amann & Wendel, Rambla de Catalena 20, Barcelona.
Boetticher & Navarro, Zurbano 58, Madrid.
Baquera Kusche y Martin, Seville.
Behn, Enrique, Valencia.
Bender, Hijos de H. A., San Feliu de Guizols, Barcelona.
Beutel, Edmundo, Calle Pascual y Genis 19, Valencia.
Bonsoms & Co., Tarragona.
Brauner, Hugo, Barco 6, Calle Colon 86, Valencia.
Buckard, Julie, Alicante.
Banco Aleman Transatlantico, Barcelona, Madrid.
Baquera, Kusche & Martin, Malaga.
Bjerre, A. (Messrs. Bjerre Sucesores), Cortina del Neuelle 21-3, Malaga.
Brang, Antonio, Santa Cruz, Teneriffe.
Compania de Alcoholes de Bilbao, Bilbao.
"Correo Espanol," Madrid.
Crosa, Angel, Teneriffe.
Cano, Emilio, Valencia and Alicante.
Continental Tyre Co., Madrid.
Cia Sevillana de Electricidad, San Pablo 30, Avenida San Sebastian, Seville.
Coppel, Carlos, Fuencarral 27, Madrid.
"Debate," Madrid.
Deutches Kohlen Depot, Santa Cruz, Teneriffe.
Dorr & Lensten, Malaga.
Drack, Otto, Barcelona.
Escuder, Jose, Valencia.
Eden, Bede, Barcelona.
Engelhardt, Otto, San Pablo 30, Seville.
Erherdt & Co., Bilbao.
Falkenstein, Felix 13, Collegiate, Madrid.
Fliedner, Jorge, Madrid.
Fuestel, Otto, Barcelona.
Frade, Francisco, Madrid.
Gans, Richard, Princessa 63, Madrid.
Gaissert, Emilio & Co., Calle Princessa 61, Barcelona.
Gottschalk, Hermanos, Bailen 27, Barcelona.
Grosch, Federico, Barcelona.
Guardiola, Juan, Alicante.
Gaswerk, Santa Cruz, Teneriffe.
German Cable Co., Teneriffe.
Gutierred, Leopoldo, Madrid.
Gutkind, Felix, Malaga.
Hielscher, Adolph, Calle Zorrilla 31, Madrid.
Heinsdorf & Lemcke, Atocha 4, Malaga.
Hinderer, Carlos, Madrid.
Hoppe & Co., Carlos, Alameda Mazanedo 1, Bilbao; Muelle 17, Santander.
Hamm, Luis S., Rambla de Cataluna 35, Barcelona.

Hartmann, Pablo, Valencia and Cortes 591, Barcelona.
Haasenstein & Vagler, Rambla Capuchinos 15, Barcelona.
Hengsternbergh, Hermann, Seville.
Koppel, Arturo, Carrera San Jeronimo, Madrid.
Knappe, Carlos, Alcala 38, Madrid.
Korting, Sociedad Espanola, Pl. Palacio 11, Barcelona.
Kochler, Guillermo, Esparteros 1, and Pl. Del Cordon 1, Madrid.
Lainez, Hijos de Evelio, Cadiz.
Lasschutza, Oscar, Vigo.
Lehmann & Co., Consejo Ciento 159, Barcelona.
Lence, Carlos, Calle Colon 13, Valencia.
Lenher, Amande, Alicante.
Lbanez, Francisco Gomez, Orotava, Teneriffe.
Lengo, Arturo, Almeria, Garrucha and Malaga.
Linhoff, Carlos (Successors to Cross & Linhoff), Malaga.
Lohr, Maximilio, Teneriffe.
Loeck, Walter, Bilbao
Maximo, Otto, Carrera San Jeronimo, Madrid.
Meyer, Carlos, Cadiz.
Muller, William, Seville.
Murillo, Marcelino, Bilbao.
"Montidero," Madrid.
Mittelstrass, Otto, Las Palmas.
Marten, Martin, Adriano 38, Seville; Calle Cortes 604, Barcelona.
Medem, Otto, Barcelona and Valencia.
Meyer y Bacharach, Calle Serano, Brao de, Valencia.
Monguio y Scharlau, Calle Aragon 219, Barcelona.
Muller, Alfred, Palma.
Muller, Hugo, Seville.
De Neufville, Sucesor de J., Santa Teresa 8 and 10, Barcelona.
Pflugger, Carl, Las Palmas.
Palacios, Luis Asin, Calle de Prečiados, Madrid.
Pares, Barcelona.
Rojas, Claudio, Teneriffe.
Reder, Gustav, Zorilla 23, Madrid.
Rook, Jorge, Hurtado de Amezaga 12, Bilbao.
Robert, Sucesores de Juan, Alicante.
Schimmelpfeng's Information Agency, Madrid.
Sociedad Vinicola, Tarragona.
Soujol, Carlos, Villamari 25, Barcelona.
Schlayer, Felix (Successor of Alberto Ahles & Co.), Alcala 46, Madrid; Pasco Aduana 15 and 17, Barcelona.
Siemens, Enrique, Las Palmas.
"Siglo Futuro," Madrid.
Sociedad Anonima Fabrica de Lamparas de Filamento, Passo de Santa Maria de la Cabeza, Madrid.
Thomson Houston-Iberica Aeg, Ronda Universitad 22, and Lamie 89, Barcelona, and Nicholas Mavia, Rivivo 8 Md., Madrid.
Thonet, Hermanos, Madrid.
"Tribuna," Madrid.
Traumann, Enrique, Madrid.
Teschendorff, Steiner & Co., Travessa S. Vincente and Calle Peana 25, Valencia.
Uhthoff, Ludolfo, San Pedro 16, Cadiz.
Varella, F. C., Santa Cruz, Teneriffe.
Vogt, Conrad, Santa Cruz, Teneriffe.
Woermann, Linie, Las Palmas.
Wackonnigg, Wilhelm, Bilbao.
Wertheim, Carlos, Calle Avino 9, Barcelona.
Winter, Emilio, Calle General Menacho 9, Cadiz.

SWEDEN.

Abrahamsson, Huno, Stockholm.
Allgemeine, Electricitats Gesellschaft, Stockholm.
Allmanna, Handels (A/B), Hamngatan 5b, Stockholm.
Almquist, Carl, Ystad.
Alpen, H., Magasinskvrtek 3A, Gothenburg.
Andersson & Lindberg (A/B), Stora Badhusgtan 6, Gothenburg.
Bagges Importagentur, O. Hamngt. 50B, Gothenburg.
Beijers, Hohn, Skofabrik (A/B), Flemminggatan 59, Stockholm.
Berg, Victor, Stockholm.
Bexelius, Henrik, Stockholm.
Biehl, G., Malmo.
Blomqvist, Olof & Co., Oscarshamm.
Brattstrom, Johann, Stockholm.
Christiernin, C., Stockholm.
Clase, Gustav S., Hamng. 15, Gothenburg.
Dahlstrom, Otto, Bredgr. 2, Stockholm.
Daumichen, Max, Stockholm.
Dressfalls Grufvor Och Malmforadlingsverk (A/B), Rosenbad 2, Stockholm.
Engestrom & Jaeppelt, per Veijersg 3, Malmo and Gothenburg.
Fallenius & Lefflers (A/B), V. Hamngatan 5, Gothenburg.
Fraencke, Moritz & Co., Gothenburg.
Forsblad & Son, Norra Hamngatan 6, Gothenburg.
Ganslandt & Gussing (A/B), Hjulhamnsg 4, Malmo, Gothenburg and Ystad.
Gleitsman, E. T., Trallborg.
Goldstuck Hainze & Co., Gothenburg.
Grafford, J., Katarinavagen 11, Stockholm.
Grubbens, Carl E., Stockholm.
Hammar & Co., Pasagatan 6, Stockholm.
Hansson, Elof, Packhuspl 2, Gothenburg and Stockholm.
Hartig, Hugo Wahrendorffsg 4, Stockholm and Gothenburg.
Harbeck, Doctor Ernst, Partille, Gothenburg.
Herrstrom, Sigfrid, Kungsgatan 30, Malmo.
Humbert, Hermann, Artillerigatan 6, Stockholm.
Harmsen, Wilhelm & Co., Stockholm.
Jager, Wilhelm, Lulea.
Johnson, Eric R., Kommendorsg 17, Stockholm.
Jonsson & Krafft, V. Hamngt 14, Gothenburg.
Kronans, Droghandel, Gothenburg.
Kurzel Fr., Malmo.
Lassen, Carl, Slussplan 63, Stockholm; Kungsg 4, Gothenburg.
Levin, Sigismund, Landskrona
Linden & Lindstrom, Gothenburg.
Larsson, Adolph, Orebro.
Malmo Yllefabriks (A/B), St. Nyg 50, Malmo.
Melin, Peders Co., N. Hamng. 6, Gothenburg and Malmo.
Rapp, David (A/B), Skeppsbron 18, Kammakareg 12, Stockholm.
Reinheimer, Phillip, Stockholm.
Roberg, Tycho, Skeppsbron 1, Gothenburg.
Rudeberg, A., Drottingatan 11, Stockholm.
Schipmann, Heinrich (A/B), Bredgr. 2, Stockholm.
Specialjarn (A/B), Kungsg. 56, Stockholm.
Stockholms Skofabrick (A/B), Hornsgatan 160, and Brannkyrkagatan 167, Stockholm.
Schmitz, August, Malmo.
Svensson, Henry W., Helingborg.
Winkler-Rathlew, S. W., Helingborg.

ALL COUNTRIES IN CENTRAL AND SOUTH AMERICA.

German Coal Depot (Deutsches Kohlen Depot).
Hardt, Engelbert & Co.
Hardt, E. W., & Co.
Staudt & Co.

British Prohibited Imports.

The following is a revised, consolidated and alphabetically arranged list of articles, as on May 13, the importation of which into Great Britain is prohibited:—

(4) Baskets and basketware (except baskets and basketware of bamboo).
(4) Beech.
(4) Birch.
(7) Bladders.
(7) Brooms.
(7) Brushes.
(7) Bulbs.
(1) Cardboard (including strawboard, pasteboard, millboard and wood-pulp) and manufactures thereof.
(7) Casings, bladder.
(4) Cement.
(4) Chinaware, earthenware and pottery (not including cloisonne wares).
(1) Cotton rags.
(4) Cotton yarns.
(4) Cotton piece-goods.
(4) Cotton manufactures of all kinds, except hosiery and lace.
(4) Cutlery.
(7) Dextrine.
(4) Elm.
(1) Esparto grass.
(7) Farina.
(4) Fatty acids.
(7) Flower roots.
(2) Fruits (canned, bottled, dried and preserved, except currants).
(4) Furniture, manufactured by joinery.
(1) Furniture woods.
(6) Hardware.
(1) Hardwoods and veneers.
(7) Hoofs.
(4) Hollow-ware.
(7) Horns.
(7) Ice.
(7) Ivory, vegetable.
(1) Linen rags.
(1) Millboard and manufactures thereof.
(3) Motor cars, chassis, motor-cycles, parts and accessories (other than tires), with the exception of motor cars, chassis, accessories and parts at present exempted from import duty under section 13 (4) of Finance (No. 2) Act, 1915.
(7) Moss litter.
(3) Musical instruments (including gramophones, pianolas, and other similar instruments and accessories, component parts, and records thereof).
(4) Oak.
(4) Oilcloth.
(1) Paper and manufactures thereof.
(1) Pasteboard and manufactures thereof.
(1) Periodical publications exceeding sixteen pages in length, imported otherwise than in single copies through the post.
(7) Pickles.
(7) Plants.
(7) Potato flour.
(7) Salt.
(7) Sausage skins.
(7) Shrubs.
(1) Slates.
(4) Soap.
(3) Spirits and strong waters of all kinds, except brandy and rum.

(7) Starch.
(1) Stones.
(1) Strawboard and manufactures thereof.
(4) Timber of beech, birch, elm, and oak.
(4) Toys and playing cards and games.
(5) Tobacco (unmanufactured and manufactured, including cigars and cigarettes).
(7) Trees.
(7) Vegetables (canned, bottled, dried, preserved).
(1) Veneers and hardwoods.
(4) Wood manufactures, except lacquered wares.
(1) Wood-pulp.
(1) Wood-pulp board and manufactures thereof.
(4) Woollen and worsted manufactures of all kinds, except yarns.

(1)

The items marked (1) are prohibited on and after March 1, 1916.

These regulations will not apply to any goods of the description specified which are imported under license, given by or on behalf of the Board of Trade and subject to the provisions and conditions of such license.

Moreover, this prohibition is subject to the grant of licenses by a commission announced on February 17, 1916, and it is stated that it has never been the intention of the Government to stop altogether the importation of the goods mentioned in the proclamation but only that power to give or withhold licenses should be made use of so as to secure substantial reduction in importations for the present at thirty-three and one-third per cent. The commission is expected to attach to licenses issued by them such conditions as they think desirable with object of securing as far as possible that consumers of paper shall receive two-thirds of their supplies in the standard year. The period of time which is to be taken as standard year is left to commission. The reduction in importation is as above for the present thirty-three and one-third per cent., but it is possible without undue hardship to interests affected.

Paper Imports.

With reference to the proclamation issued prohibiting the importation amongst other articles of paper, wood-pulp and other paper-making materials (including esparto grass, linen and cotton rags), it is announced that His Majesty has been pleased to issue a commission to grant licenses for the importation of such quantity or such proportion of these goods as the Board of Trade may from time to time direct, and to arrange for the importation of this quantity or proportion and for the distribution of the imports among papermakers and paper-users on such terms as may appear to the commission to be equitable.

Regulations as to Licenses.

The regulations as to licenses for the importation of paper and paper-making materials into Great Britain, which were recently issued by the Royal Commission on Paper, were printed in Weekly Bulletin No. 635, page 678.

(2)

Items marked (2) are prohibited from March 13, 1916.

This prohibition does not apply to such fruits which are the products of dominions and colonies nor the fruits imported under licenses given by the Board of Trade.

(3)

Items marked (3) are prohibited from March 27, 1916.

These prohibitions will be subject to issue of licenses, but such licenses will not in general be issued except where evidence is forthcoming that the goods were either (1) actually en route for the United Kingdom on March 21, or (2) paid for on March 21.

(4)

Items marked (4) are prohibited from March 30, 1916.

Licenses will in general be granted only in respect of goods on the way to the United Kingdom or goods actually purchased on March 30, 1916.

(5)

The Board of Trade, London, will grant licenses for importation of tobacco manufactured in the Dominion from imported leaf as well as tobacco grown in the Dominion. Certificates of origin issued by the Department of Inland Revenue, Ottawa, are necessary, and must accompany application made by consignees to the Board of Trade for a license to import.

(6)

Hardware includes all the goods which are entered under that heading in the general railway classification of goods, dated January 1, 1916, with the following exceptions: Awl blades, bayonets, bullet moulds, caps for cartridge making, cartridge-cases, hammers and hammer heads, horse clippers, jacks (small), jacks (screw), percussion-cap shells, pliers, pulleys and pulley blocks, scythes and sickles, shears, spanners, tools (carpenters', coopers', edge, joiners', masons' and shipwrights'), trenching struts, tubes (brass or copper).

Note.—The following are the articles entered under the general railway classification of goods, which list has been forwarded the Department by Mr. J. E. Ray, Trade Commissioner, Birmingham:—

Hardware—
Packages containing any hardware articles (not gold, silver, or plated) in Class 3 and in lower classes, and any of the following articles (not gold, silver, or plated), viz.:—
Awl blades.
Balls, steel, for bearings, in casks or cases.
Bayonets.
Bed keys.
Bedsteads, iron, or other metallic, in bundles (also see Bedsteads).
Bellows, packed.
Bellow pipes.
Bell, small.
Bicycle and tricycle fittings and accessories, in casks, cases, or crates, as under:—
Back fork bridges.
Back stay bridges.
Bells.
Bottom brackets, including balls, spindles, cones, and cups, complete, or in parts.
Bolts and nuts, nickelled.
Brakes, complete, or in parts.
Chain adjustments.
Chain wheels.
Cotter pins and nuts.
Cranks.
Foot rests.
Forks.
Fork ends, complete, or in parts.
Frame lugs, complete, or in parts.
Free wheels, complete, or in parts.
Handles.
Handle bars, including lugs and pillars.
Hubs, including axles, balls, cones, and cups, complete, or in parts.
Lamp brackets.
Lubricators and oil hole covers.
Pedals, complete, or in parts.
Seat pillars.
Spokes and nipples.
Sprocket wheels.
Steel balls.
Steering heads and crowns, complete, or in parts.
Steering locks.
Steps.
Toe clips.
Bicycle and tricycle gear cases, metallic, packed.
Bicycle and tricycle gear cases, metallic, cases or crates.
Bicycle and tricycle tyre valves.
Bicycle stands, iron.
Bit burnishers, packed.
Bits, iron or steel.
Blanks, bronze and copper, for stamping for coins.
Blow pipes.
Bolts, door.
Boot trees, iron or steel.
Bottle jacks.
Box or Italian irons.
Boxes, safety.
Boxes, string, cast iron or steel.
Boxes or trunks, tin or sheet iron, packed in crates, cases, or casks.
Brackets, shelf, iron or steel.
Brands, iron or steel.
Brasswork, spun or stamped, packed.
Brewers' bushes (metal castings for screwing into casks).
Buckles, brass, iron, or steel.
Bullet moulds.
Busks, wooden or horn.
Buttons.
Calendar frames, metal, common, without glass.
Callipers.
Candlesticks, brass or iron.
Caps, brass and metal, for cartridge making.
Carpet bag frames.
Carriage and foot warmers.
Cart fittings, metallic, packed.
Cart steps.
Cartridge cases, brass.
Cartridge cases, brass (capped, but otherwise empty).
Castings, brass, bronze, German silver, gun metal, or nickel.
Castors of all kinds.

Chains, curb or door.
Cinder sifters.
Clasps, book, boot, or belt.
Clock weights, lead, cased in brass, packed in wooden cases.
Coach fittings, metallic, packed.
Coach wrenches.
Coal scuttles or vases, metallic, or wooden (not coal cabinets), in crates, cases, or boxes.
Coffee mills, small hand.
Coffin furniture, metallic.
Collars, dog.
Copperwork, spun or stamped, packed.
Copying presses.
Corkscrews.
Curry combs.
Dies and die stocks, e.o.h.p.
Dish covers, wire, nested and packed.
Dust bin handles.
Dust preventers, e.o.h.p.
Eyelets.
Fender curbs, e.o.h.p., in crates, cases, or boxes.
Fenders, common bedroom, in bundles, iron or steel, brassed or lacquered, at owner's risk only.
Fenders, metallic, packed in crates, cases, or boxes.
Ferrules, iron, brass, or steel.
Fire guards, metal.
Fire irons.
Fish hooks.
Fog horns.
Forks and spoons, metal.
(Forks and spoons, plated—see Plated goods).
Forks, toasting, iron or steel.
Gas fittings, in parts, except brass and copper tubing.
Gear wheels, e.o.h.p.
Gins (wheels with frames for hoisting purposes).
Grindery.
Gun barrels, rough.
Gun locks and gun furniture.
Hammer heads, e.o.h.p., packed.
Hammers, not steam or power e.o.h.p.
Handcuffs.
Handles, chest and saucepan.
Hanging bars, wrought iron.
Harness fittings, metallic, packed.
Hat and umbrella holders or stands, cast iron.
Hay forks, in bundles.
Hinges, brass.
Hooks, boot, button, hat, coat, and reaping.
Hooks and eyes.
Horse clippers, packed in casks or cases.
Jacks, small.
Jacks, screw, except iron.
Japanned ware, in casks, cases, or crates.
Kitchen fireplace stands.
Knitting pins.
Knives or blades, for cutting machines, e.o.h.p.
Knobs, door.
Knobs, range, iron or steel.
Knockers, door.
Ladles (not puddlers'), iron.
Lamp burners.
Lamps, for burning off paint, and for soldering, etc.
Lamps, miners'.
Lanterns, tin or iron.
Latches, door.
Lemon squeezers, cast iron or steel.
Locks and keys.
Magnets, e.o.h.p.
Match boxes, japanned or enamelled tin, new, empty, packed.
Match holders, cast iron or steel.
Matchetts.
Medals, metal, not gold, silver, or plated.
Military ornaments.
Mincing machines.
Money banks, children's, cast iron.
Mortars and pestles, iron or steel.
Motor car body panels, seats, sides and mudguards, steel, not painted or enamelled, packed, e.o.h.p.
Music stands (folding), metal.
Nails and rivets, brass or copper.
Needles (in tin-lined cases).
Nut crackers.
Ornaments for saddlery, brass, iron, or steel.
Ornaments for uniform.
Pans, ash.
Pans, copper, for closets.
Pans, dust.
Pans, warming.
Patten rings.
Patterns, travellers' hardware.
Perambulator hood frames, iron or steel.
Percussion cap shells.
Pewter measures, in casks or cases.
Photograph frames—
Cast iron, gilt.
Metal (common), fitted with glass.
Pins, metal, in boxes or casks.
Plates, door.
Plates, iron, enamelled.
Pliers.
Powder flasks.
Pulley blocks, iron.
Pulleys, iron.
Pumps, hand, brass.
Putty knives.
Railway carriage keys.
Refrigerators, e.o.h.p.
Riddles.
Saddletrees.
Safes, ice.
Safety catches (hooks), iron, for use in collieries.
Sardine tin openers.
Scales and weights, letter.
Scales not exceeding 1 cwt. each, and weights for same, packed.
Screw jacks, except iron.
Screws, table-expanding.
Screws, e.o.h.p.
Scythe blades.
Scythes and sickles
Shears, garden and sheep.
Shears, tinman's.
Ships' logs, metal.
Shoe horns and pegs, metallic.
Show tablets, metal, enamelled.
Signal lamps (railway).
Skates.
Skewers, iron or steel.
Snuffers, iron or steel.
Spades (children's), iron or steel, in mixed packages of hardware goods.
Spanners.
Spittoons, iron.
Spring balances.
Springs, chair, sofa, mattress, or door.
Spurs
Stair rods.
Steel, fluted, in thin strips, for umbrella ribs.
Steelyards.
Stirrups.
Sugar nippers.
Sweat scrapers, packed.
Syringes, garden.
Tacks.
Taper holders, metal.
Taps, brass.
Terrets.
Thimbles.
Tin strips (tamped and perforated) used in paper-box making.
Tinware, in casks, cases, crates or hampers.
Tips, brassed for boot heels.
Tobacco boxes, metal.
Tools, carpenters', coopers', edge, joiners', masons', and shipwrights'.
Traps, sink, brass or copper.
Traps, vermin.
Trays, iron or steel.
Trays, iron or steel, nickelled.
Trenching struts.
Trivets, iron or steel.
Trouser stretchers, iron, portable.
Trowels.
Trunks or boxes, tin or sheet iron, packed in crates, cases, or casks.
Tubes, brass or copper (except steam tubes), packed.
Umbrella fittings.
Umbrella and hat holders or stands, cast iron.
Umbrella stretchers.
Valves, brass.
Valves, partly of iron or steel and partly of other metals.
Ventilators, small, iron or brass, for buildings, packed.
Washers, brass or copper.
Weavers' mails, iron or steel.
Weighing machines, small (those used for weighing packages and goods).
Weights, brass.
Weights, clock, lead, cased in brass, packed in wooden cases.
Weights and scales, letter.

(7)

The items marked (7) are prohibited from May 10, 1916.

The prohibition does not apply to any such goods imported under Board of Trade license and subject to provisions and conditions of such license. (Trade and Commerce Weekly Bulletin, No. 643).

Trading with the Enemy.

Mr. John McDougald, C.M.G., Commissioner of Customs, Ottawa, has sent the following memo., dated May 11th, to Collectors of Customs, viz.:—

"It has come to the notice of the Department that in some instances exporters in Switzerland have routed shipments for Canada through Germany to a port in Holland. As it is considered that this would constitute a violation of the proclamations relating to Trading with the Enemy, you should direct the attention of firms who import from Switzerland to this fact, so that they may caution exporters in Switzerland against shipping goods to Canada through Germany.

When the bills of lading or other shipping documents show that goods exported from Switzerland have been laden on board vessels at Rotterdam or other ports in Holland, it may be assumed that such goods have been carried through Germany.

Any such shipments arriving at your port are not to be allowed delivery without instructions from the Department."

LOCOMOTIVE WORKS' EMERGENCY HOSPITAL.

The Montreal Locomotive Works, Limited, are to have an emergency hospital, to be housed in a special building. The latter will be an exact duplicate of the emergency hospital at the American Locomotive Works, Richmond, Va. In it will be treated all minor injury and accident cases, while severe cases will receive first aid treatment and be sent on to the regular hospitals for further treatment. The second storey of the building is used at Richmond for meetings of the Safety Committee, and doubtless it will be put to somewhat similar use at Montreal. Hitherto a room in the storehouse has been used for emergency purposes, but the new building, now under construction, will be much more useful.

A SEWING MACHINE MERGER.

The Canadian White Sewing Machine Company, a branch of the White Sewing Machine Company, of Cleveland, has acquired the plant and business of the Raymond Sewing Machine Company, which has been established in Guelph for forty years. The present plant will be used, and the capacity doubled while building operations for the new plant in St. Patrick's Ward are under way. The company has been deeded a site there, by Mr. J. W. Lyon, of twenty acres, and the new plant will cost in the neighborhood of a quarter of a million dollars. When completed it will give employment to about seven hundred men, nearly all skilled mechanics.

FOREIGN TRADE OF CANADA.

For the first month of the fiscal year, beginning April 1st, 1916, Canada's foreign trade compares as follows:—

IMPORTATIONS.

April.

	1914.	1915.	1916.
Detailed goods	$23,945,085	$16,615,321	$28,929,084
Free goods	12,992,628	11,776,319	21,218,746
Coin and bullion	333,674	572,116	464,789
Duty collected	6,458,271	5,986,662	9,797,265

EXPORTATIONS.

	1914. April.		1915.		1916.	
Products of:—	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
The Mine	$2,681,364	$ 656	$2,795,002	$1,957,463	$3,690,744	$1,523
The Fisheries	531,132	9,920	710,447	20	829,515	2,377
The Forest	1,874,739	4,836	1,929,440	.....	2,287,939	26
Animals and their Produce	1,860,666	127,094	3,312,498	52,840	5,112,105	282,519
Agriculture	6,494,911	37,286	6,618,443	38,482	21,305,977	33,054
Manufactures	4,295,199	369,039	13,221,658	439,228	21,573,078	397,039
Miscellaneous	15,060	113,359	104,401	96,652	292,677	92,523
Total	$17,753,071	$662,190	$28,691,889	$2,584,685	$55,092,035	$809,061
Coin and Bullion	.....	1,242,606	.....	4,980,701	.....	71,619
Grand Total	$17,753,071	$1,904,796	$28,691,889	$7,565,386	$55,092,035	$880,680

April.

	1914.	1915.	1916.
Total merchandise entered for consumption	$36,937,713	$28,391,640	$50,147,830
Total merchandise, Domestic, exported	17,753,071	28,691,889	55,092,035
Total merchandise, Foreign, exported	662,190	2,584,685	809,061

SUCCESS OF GALVANIZED SHEET INDUSTRY.

As an indication of the success attending the efforts of the Dominion Sheet Metal Co. to give Canadian buyers of galvanized sheets a steady supply at this time, when import shipments are so small, the fact that they have found it necessary to make two additions to their plant in Hamilton, one 20 ft. x 100 ft. and the other 40 ft. x 80 ft., is significant. While sheet galvanizing plants in the United States are reported to have been operating only on a 30 per cent. basis thus far in 1916, this new Canadian plant has done considerably better.

Many difficulties have been met, including freight embargoes, both inbound and outbound, shortage in natural gas fuel supply, scarcity and high cost of labor, abnormal prices of raw materials; but, undeterred by such obstacles, this new organization has kept its plant in operation and has built up a reputation for service and quality. An employee has been kept on the go tracing raw material shipments, especially spelter from Missouri and Oklahoma points. In this connection it might be well to note that not a pound of Canadian prime Western spelter can be purchased, notwithstanding press reports recently given out in connection with proposed spelter bounty arrangements. It is hoped that eventually the British Columbia product will be available.

THE LIGHTING PROBLEM.

As a rule manufacturers are more interested in lighting during the winter months than during the summer, principally due to the fact, that the lighting conditions in their plants are forcibly brought to their notice.

The manufacturers of lighting equipment have been endeavoring for some time to impress upon the superintendents and managers of plants, that the time to make changes, revisions or repairs in the lighting equipment is during the summer months, and that this work should be started early. Just after the winter season, when artificial light is required to the greatest extent, the superintendent or plant manager has clearly in mind his experience with the lighting system during the short and dark days, and it is therefore advisable for him to make plans for the revision of the system, which can be carried out during the months when artificial light is seldom needed.

We find, as the years go by, that the lighting season, so-called, is not as clearly defined a period as it was a few years ago, and that there is considerable activity during the summer months for industrial lighting.

NEW BELTS FOR OLD.

The Peerless Weaving and Belting Company, Limited, which has recently been incorporated with an authorized capital of $150,000, has leased a factory on Arthur Street, Hamilton, which was formerly occupied by the Ludlam-Ainslie Company, and will start immediately equipping this factory for the manufacture of cotton and leather belts, automobile accessories, such as anti-rattler packing, radiator lacing, brake lining, etc., and for the rebuilding of old leather belts.

Owing to the scarcity and high cost, leather for belting purposes to-day is so expensive as to be almost prohibitive for this purpose. The company has a process for rebuilding old leather belts that is said to make them as good as new and at about one-half the cost of new leather belts. The company will take over all Canadian rights of the Peerless Belting Company, of Gardenville, N.Y. The directors of the Canadian company are Edward De Ette Matteson, Buffalo; W. F. Frantz, Golden, N.Y.; Jacob Dilcer, Buffalo; and Edward F. Gingras, son of the president of the Peerless Belting Company, of Gardenville, who will superintend the Canadian factory.

H. D. SCULLY LEAVES ASSOCIATION.

H. D. Scully, who has been actively connected with the work of the Association since 1907, has resigned to accept the position of secretary of the Russell Motor Car Co. and a director of the Canada Cycle & Motor Co., Toronto. The retirement of Mr. Scully, which took place on June 1, has called forth many expressions of regret from both officers and members of the C.M.A., who have found in him a zealous and efficient secretary, whose services have proved of unquestioned value.

Mr. Scully, who was born in Toronto in August, 1883, had a brilliant academic course, distinguishing himself at the university by winning the P. W. Ellis gold and silver medals



H. D. SCULLY

Who has been for Nine Years Connected with the Staff of the C.M.A., and who has just Resigned to become Secretary of the Russell Motor Car Co.

—Photo by British & Colonial Press.

and the Alexander Mackenzie Fellowship and by heading the political science course throughout. Following his university career, he served for a year on the reportorial staff of the Toronto *Star*, and then in 1907 joined the C.M.A. staff as assistant secretary and secretary of the Toronto Branch.

When the Canadian Home Market Association was formed Mr. Scully became its secretary, managing its exhibition train for several years with great success. On the establishment of the Federation of Safety Associations, following the enactment of the Ontario Workmen's Compensation Act, he took up the duties of secretary, while this year he was actively concerned with the formation and work of the Munitions Section. Besides these association activities, Mr. Scully acted for ten years as secretary-treasurer of the Canadian Club of Toronto.

QUEBEC'S TECHNICAL SCHOOLS.

In the article on page 68 of the May issue regarding technical schools in the Province of Quebec, it was stated that the cost of the building, furnishing and plant at Montreal was $63,000. This figure was obviously an error and should have been $630,000.

NEW CANADIAN COMPANIES.

A List of Recent Incorporations, With Such Particulars as Are Available Regarding Their Plans.

The Brophey Doll Co., Limited, were incorporated recently with an Ontario charter. Both Montreal and Toronto people are interested in extending Canada's manufactures in the toy and doll business, and this $40,000 company will probably be a welcome newcomer in this business.

The Canada Clock Co., Limited, head office Toronto, have taken out a Dominion charter for the manufacture of electrical time clocks and other specialties along this line. The capital is $250,000.

Detroit and Sandwich capital is interested in developing some mica properties in Ontario. The head office of the Detroit Mica Mining Co., Limited, will be Windsor, Ont., and the authorized capital $150,000.

Something new appears to be promised by the advent of the Disappearing Propeller Boat Co., Limited, Toronto, into the launch manufacturing field. This company is authorized to use $45,000 capital.

Visitors to the Exhibition last year will remember the Tygard engine shown there. Provision is now being made to handle the interests of the controlling people by means of the Dominion Tygard Engine Mfg. Co., Limited, Toronto. The authorized capital is $100,000.

The County of Wellington has long been famed for the production of high-class beef. The Drayton Silo Co., Limited, of Drayton, Ont, propose to assist the Wellington County farmers by bringing locally made slios within an easy economical radius and price.

A $1,000,000 company has been formed in St. Catharines to manufacture and sell a resilient or shock-absorbing tire which can be used on automobiles or any other vehicles. The name of this company is The Globe Shock-Absorbing Tire Co. of Canada, Limited.

A business recently established in Goderich has seen fit to increase their capital and take out a charter granting them wide powers in the manufacture of woodenware, furniture, etc. The capital of the Goderich Mfg. Co., Limited, is now $100,000.

Hamilton has recently lost, through assignment, a tar and ammonia industry, but *The Canada Gazette* of recent date advises that its place will be taken by the Hamilton Tar and Ammonia Company, Limited, with a capital of $50,000.

Lambton County is to have another company added to its list of flax producers. The Lambton Flax Co., Limited, Petrolea, $40,000 capital, is permitted not only to grow but to spin and manufacture flax and other materials.

Some Montreal capitalists are interested in making good the deficiency in tanning and other extracts in Canada. This is evidenced by the incorporation of Miller Extracts, Limited, Montreal. The capital is $50,000.

Another big canning company is promised for Windsor, Ont. The capitalization is $250,000, and Quality Canners of Canada, Limited, propose to manufacture a full line of preserved fruits, vegetables and kindred lines.

The Raymond Mfg. Co. of Guelph is passing through another stage. This company has been in the hands of the receiver for some time now, and recently disposed of their cream separator patents to the Ontario Machine Company of Toronto. A further development of this is noticed in a recent *Canada Gazette*, which states that the White Sewing Machine Company of Canada, Limited, formerly operating in Hamilton, have taken over the Raymond Sewing Machine patents, and will operate the Guelph plant under the White name.

Imperial Bank of Canada

PROCEEDINGS OF THE

Forty-First Annual Meeting of the Shareholders

Held at the Banking House of the Institution, in Toronto, on Thurs., 25th May, 1916, at 12 noon.

The Forty-first Annual General Meeting of the Imperial Bank of Canada was held, in pursuance of the terms of the Charter, at the Banking House of the Institution, 25th May, 1916.

THE REPORT.

The Directors beg to present to the Shareholders the Forty-first Annual Report of the affairs of the Bank, with Balance Sheet as on the 29th April, 1916, together with statement of Profit and Loss Account showing the result of the operations for the year ended on that date.

The net profits after providing for bad and doubtful debts and for interest on bills under discount not yet matured amounted to	$1,003,960 85
Being at the rate of 6.687 per cent. on the combined paid-up Capital, Rest and Profit and Loss Account.	
The balance at credit of Profit and Loss Account brought forward from last year was	1,012,989 23
Making total at credit of Profit and Loss of	$2,016,950 08
This amount has been applied as follows:—	
Dividends at the rate of 12 per cent. per annum	$840,000 00
Annual contribution to Officers' Pension and Guarantee Funds	7,500 00
Contribution to Canadian Patriotic Fund (being balance of subscription of $25,000)	15,000 00
Contribution to British Red Cross Fund	2,500 00
War tax on bank note circulation to 29th April, 1916.	57,293 79
Auditors' fees	5,000 00
Balance of account carried forward	1,089,656 29
	$2,016,950 08

During the year branches have been opened at Newmarket, Ont., and Invermere, B.C. The following branches have been closed:—In the Province of Ontario, Elk Lake and West Side Branch, Welland; in the Province of Quebec, St. Lawrence Boulevard Branch, Montreal, and Upper Town Branch, Quebec; in the Province of Alberta, Lethbridge Branch; in the Province of British Columbia, Athalmer Branch, and Douglas Street Branch, Victoria.

Your Directors deeply regret to have to advise the death on 14th January last of Mr. J. Kerr Osborne, who had been a member of the Board since 15th June, 1904; also on 6th April, 1916, of Mr. George Hyde, one of the Auditors of the Bank.

The vacancy on the Board has been filled by the election of Mr. J. W. Woods.

The Bank has received notice from shareholders of the intention to nominate Mr. G. T. Clarkson, of Toronto, to replace the late Mr. Hyde.

In addition to the amount already paid a further subscription of $25,000 to the Canadian Patriotic Fund has been made which will be required probably during the current year.

All the branches of the Bank have received the usual careful inspection during the year. The Auditors appointed by the Shareholders have made their examinations as required by the Bank Act and the certificate of the surviving Auditor is attached to the Balance Sheet.

Your Directors have much pleasure in testifying to the loyalty, faithfulness and efficiency of the staff.

All of which is respectfully submitted.

PELEG HOWLAND, President.

LIABILITIES.

Notes of the Bank in circulation		$5,944,439 00
Deposits not bearing interest	$11,253,426 11	
Deposits bearing interest, including interest accrued to date of statement	48,965,201 86	
		60,218,627 97
Balances due to other Banks in Canada	$38,095 14	
Due to Banks and Banking Correspondents in the United Kingdom	7,370 12	
Due to Banks and Banking Correspondents elsewhere than in Canada and the United Kingdom	313,222 34	
Acceptances under Letters of Credit (as per contra)	90,346 96	449,034 56
Total Liabilities to the public		$66,612,101 53
Capital Stock paid in		7,000,000 00
Reserve Fund Account	$7,000,000 00	
Dividend No. 103 (payable 1st May, 1916) for three months, at the rate of 12 per cent. per annum	210,000 00	
Balance of Profit and Loss Account carried forward	1,089,656 29	
		8,299,656 29
		$81,911,757 82

ASSETS.

Current coin held by the Bank	$1,620,161 34	
Dominion Government Notes	8,422,186 00	
		$10,042,347 34
Deposit with the Minister for the purposes of the Circulation Fund		338,272 66
Notes of other Banks		665,352 00
Cheques on other Banks		2,161,925 36
Balances due by other Banks in Canada		333,043 72
Due from Banks and Banking Correspondents in the United Kingdom		2,196,471 60
Due from Banks and Banking Correspondents, elsewhere than in Canada and the United Kingdom		6,352,289 15
		$22,089,701 83
Dominion and Provincial Government Securities, not exceeding market value	$4,920,185 56	
Canadian Municipal Securities, and British, Foreign, and Colonial Public Securities other than Canadian	4,947,074 69	
Railway and other Bonds, Debentures and Stocks, not exceeding market value	884,321 71	
		10,751,581 96
Loans to Provincial Governments	$65,793 99	
Loans to Cities, Towns, Municipalities and School Districts	6,548,023 70	
Call and Short Loans (not exceeding thirty days) in Canada on Bonds, Debentures and stocks	4,127,322 78	
Call and Short Loans (not exceeding thirty days) elsewhere than in Canada	4,049 31	10,745,189 78
		$43,586,473 57
Other Current Loans and Discounts in Canada (less rebate of interest)		34,646,351 02
Liabilities of Customers under Letters of Credit (as per contra)		90,346 96
Overdue Debts (estimated loss provided for)		226,839 86
Real Estate (other than Bank premises)		259,629 86
Mortgages on Real Estate sold by the Bank		440,673 58
Bank Premises, at not more than cost, less amounts written off		2,621,945 84
Other Assets, not included in the foregoing		39,497 13
		$81,911,757 82

PELEG HOWLAND, President, E. HAY, General Manager.

AUDITOR'S REPORT TO SHAREHOLDERS.

I have compared the above Balance Sheet with the books and accounts at the Chief Office of Imperial Bank of Canada and with the certified returns received from its Branches, and after checking the cash and verifying the securities at the Chief Office and certain of the principal Branches on 29th April, 1916, I certify that in my opinion such Balance Sheet exhibits a true and correct view of the Bank's affairs according to the best of my information, the explanations given to me and as shown by the books of the Bank.

In addition to the examinations mentioned, the cash and securities at the Chief Office and certain of the principal Branches were checked and verified by me during the year and found to be in accord with the books of the Bank.

All information and explanations required have been given to me and all transactions of the Bank which have come under my notice have in my opinion been within the powers of the Bank.

R. J. DILWORTH, F.C.A.,
of Clarkson, Gordon and Dilworth.

The customary motions were made and carried unanimously

Mr. R. J. Dilworth, F.C.A., Toronto, and Mr. G. T. Clarkson, F.C.A., Toronto, were appointed Auditors of the Bank for the ensuing year.

The Scrutineers appointed at the meeting reported the following Shareholders duly elected Directors for ensuing year:—Messrs. Peleg Howland, Elias Rogers, William Ramsay (of Bowland, Stow, Scotland), Cawthra Mulock, Hon. Richard Turner (Quebec), William Hamilton Merritt, M.D. (St. Catharines), W. J. Gage, Sir Jas. A. M. Aikens, K.C., (Winnipeg), Hon. W. J. Hanna, M.P.P.; John Northway, J. F. Michie, J. W. Woods.

At a subsequent meeting of the Directors, Mr. Peleg Howland was re-elected President and Mr. Elias Rogers, Vice-President for the ensuing year.

PELEG HOWLAND, President. E. HAY, General Manager.

TRADE ENQUIRIES

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

501. **Manganese Dioxide.**—A correspondent in Nova Scotia would like to get in touch with firms using quantities of manganese dioxide.

502. **Barrel Flour Brushers.**—A Nova Scotia enquirer would like to obtain one of the above named machines.

503. **Concrete Forms.**—A request is made for information concerning Canadian companies making forms used in the construction of concrete houses.

504. **Cast Iron Tie Posts.**—An Ontario correspondent would like to get in touch with a maker of cast iron tie posts.

505. **Silo Hardware.**—The different kinds of special hardware used in the construction of silos is enquired for by an Eastern Ontario correspondent.

506. **Hands Free Desk Telephone.**—A party in the United States has the Canadian patent rights on a "hands free" telephone, and wishes to have same manufactured in Canada.

EXPORT TRADE ENQUIRIES.

507. **Agency.**—A manufacturers' agent from Georgetown, British Guiana, having a temporary address in Montreal, would like to get in touch with Canadian manufacturers of all kinds of goods who are seeking representation in the West Indies.

508. **Agency.**—An Englishman with 15 years' selling experience in hardware lines in Canada is now considering taking up his residence in England, and would like to get in touch with manufacturers who desire representation there.

509. **Glass Battery Boxes.**—A Quebec correspondent is interested in obtaining quantities of blown or pressed glass battery boxes. The maximum size is 18 inches long by 18 inches deep by 12 inches wide.

510. **Printing Papers.**—A New York export house is interested in communicating with Canadian manufacturers of printing paper, offering them an opportunity of entering the New Zealand trade.

511. **Agency.**—We have been supplied with the name of a recommended agent in Christchurch, New Zealand, who desires to represent Canadian manufacturers of toys and fancy goods in Australia and New Zealand.

512. **Paper Making Materials.**—Considerable opportunity is said to exist for the exportation of these lines in Spain. We can put enquiring manufacturers in touch with a gentleman in Madrid interested in developing this trade.

513. **Paper and Twines.**—We have a London enquiry for all kinds of these materials.

514. **Toy Soldiers.**—A party in Chicago is desirous of communicating with Canadian manufacturers of toy sol-

515. **Agency.**—A well known firm of New York exporters, shortly represented in Australia, would like to hear from anyone considering entering that market.

516. **Rubber Making Machinery.**—A New York enquirer would like to get in touch with firms able to produce the necessary machinery for the rubber industry.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

517. **Wood Pulp.**—An English firm wishes to receive samples of soda and sulphite pulp, with quotations.

518. **Basswood for Veneering.**—A Glasgow firm would be glad to receive quotations for above, c.i.f. Glasgow.

519. **Milk.**—An old established manufacturers' agent in St. John's is desirous of obtaining an agency for Canadian condensed milk.

520. **Steel Wagon Axles.**—A Yorkshire firm desires the addresses of Canadian manufacturers who can supply military wagon steel axles.

521. **Asbestos, Soapstone, Graphite, and Chrome.**—A Glasgow firm would be very glad to enter into communication with Canadian exporters of the above.

522. **Picture Moulding, Especially Oak.**—A Glasgow firm is open to purchase any kind of moulding, especially oak. Samples and quotations asked for.

523. **Decorated Tin Boxes.**—An Irish company of tobacco and cigarette manufacturers desires the addresses of Canadian manufacturers of decorated tin boxes.

524. **Optical Goods.**—A London company desires the addresses of Canadian manufacturers of optical goods.

525. **Chemical Wood Pulp.**—A paper manufacturer in Yorkshire enquires for Canadian shippers in a position to supply him with any part of 2,000 to 3,000 tons per annum of chemical wood pulp, soda and sulphite. Quotations should be accompanied by sufficient samples for test purposes.

526. **Strawboards, Leather Boards, Etc.**—A Newcastle firm of box manufacturers wishes to hear from Canadian shippers of strawboard, leather board, enamel and craft papers and corrugated paper. Their annual requirements of strawboards under normal conditions are in the neighborhood of 60 to 80 tons yearly, but, at present, this consumption has been reduced by half. Samples should accompany the strawboard quotations.

527. **Wall Paper.**—A firm in British Guiana has asked to be put in communication with Canadian manufacturers of wall paper.

528. **Wrapping Paper.**—Canadian manufacturers of wrapping paper might find it to their advantage to communicate with a British Guiana firm.

529. **Bobbins.**—A Calcutta firm desires quotations on wooden bobbins, c.i.f. Calcutta, either at present or when normal conditions resume, in cases of 10 gross each. Samples of bobbins may be inspected at the Department of Trade and Commerce, Ottawa.

530. **Hardware.**—A Demerara commission merchant asks for names of Canadian hardware manufacturers, with a view to securing agency.

531. **Strawboard.**—A Bradford firm which uses 400 to 500 tons of strawboard per year ask for quotations and prices.

HOW TO GET THE ACCURATE COST

By F. E. MUTTON

TO obtain the actual cost of production is the great desire of all manufacturers, for by this and this only are they able to figure out whether they are actually making a profit each month.

The cost of a manufactured article consists of three parts or items; burden expense, raw material, and time or labor. We arrive at this burden expense by adding up all of the items of fixed charges, office expense, selling expense, material consumed in manufacturing, such as oil, waste, etc., which cannot be charged direct to any specific article, non-productive labor (which should be obtained by dividing your pay roll into two parts of productive and non-productive). The total of this non-productive pay roll should go into the burden. This item of burden expense you will see amounts to a large sum and not one dollar of it has been paid for actually producing. How are you going to get it back? You cannot add it to the cost of raw material you have purchased, sell it and get your money back. Raw material has not caused any of this expense. You cannot charge it to non-productive labor for that has not produced anything you can sell and get your money back. There is nothing left to charge or add this burden expense to but productive labor.

Not until you begin work on your raw material is there anything *produced* by or from which you can get back the money paid out for burden expense, *therefore we must add the burden expense to productive labor.* How can we add it and have it properly distributed? You will say perhaps a certain per cent. to the cost of material and labor. I have shown you above that raw material had nothing to do with expense, therefore you should not add a certain per cent. to the cost of that material as a burden. It was the productive labor that consumed that burden. Then you say you will add a larger per cent. to the cost of labor. But this will not do. For example, you have two men working side by side at the bench; one you pay 45c. per hour, the other man 20c. per hour. Each man works on his respective piece of work eighteen (18) hours. By the percentage method you charge say 40 per cent. of labor cost on each man's work to cover burden expense. On this basis, for the first man's share you charge $3.24 and only $1.44 for the second man, and you cannot show where the first man consumed more of the actual burden expense than the other, and yet you are charging over twice as much to the first man's labor.

To get the proper amount to add to this labor to cover this expense, you should divide the total amount of the burden expense for the month by the total number of productive hours. Say your burden expense is $720.00 and your productive hours are 3,600. This gives you a burden rate of 20c. a productive hour, therefore to the first man's wages of $8.10 you add the burden rate of 20c. per productive hour, eighteen hours $3.60, making labor $8.10, burden cost $3.60, material $4.50, total $16.20, the absolute accurate cost. To the second man's wages of $3.60 you add the burden hour rate of 20c. per productive hour, eighteen hours $3.60, making labor $3.60, burden cost $3.60, material $1.50, accurate cost $8.70, and to this you add what per cent. of profit you intend to make.

By the percentage basis, add 40 per cent. or $3.24, to the first man's wages of $8.10, material $4.50, making cost $15.84, a difference of 36c. short of actual cost. To the second man's wages of $3.60, add 40 per cent. or $1.44, plus cost of material $1.50, making a total of $6.54, a difference of $2.24 short of actual cost. This is where you fall short of making the profit you had figured on. If you will give this careful thought you will see it is the *only* way to arrive at the accurate cost.

Take another example. Say we have three men working by the piece. The first man we pay 40c. per 100. In six hours he turns out 475 pieces, $1.90. The second man we pay 50c. per 1,000. In six hours he turns out 6,000 pieces, $3.00. The third man we pay one cent. a piece. In six hours he turns out 225 pieces, $2.25. If you add 40 per cent. to labor cost, you will add 76c. to the first man, $1.20 to the second man and 90c. to the third man, when each and every one of them took six (6) hours and consumed an equal amount of the burden expense, and should be charged an equal amount, but on a percentage basis you would charge each man a different amount for burden expense. It is necessary to keep a record of the *hours* that piece hands work in order to obtain the accurace burden their product should bear.

Another example. A piece worker starting to work in the morning and working only half a day, five (5) hours, earning $1.00. By the old method they would charge 40 per cent. to this to cover burden expense, making $1.40. This burden expense keeps right on the other half of the day, but what bears it? If she had worked the rest of the day she would have earned $2.00, and 40 per cent. burden expense makes $2.80. Although the burden expense went on just the same but as she did not work and you could not, according to your methods, charge it to her labor, where does it come in? If you had obtained a productive hour rate by dividing the total burden expense by the total productive hours, the burden expense for this half day she did not work would be properly and accurately taken care of.

It is comparatively easy to obtain the cost of material that enters into your product, but the time or labor is the slippery element of cost, also the proper burden rate has been difficult to ascertain. By the use of our Special Cost Keeper you can get the elapsed time of every operation, every job, exact labor cost to a cent. on every order that goes through your works, also the productive hours, which will give you the proper burden rate and absolutely accurate distribution of your burden expense, saving you thousands of dollars a year.

If you want to keep the individual operation on one card, with this Special Clock you can register the elapsed time on and off as many times as you like. If when you issue an order you wish at the same time to start a job ticket, having it accompany the order through the works, accumulating the time of each operator who works on it, this Special Clock will record the elapsed timeof each man working on the job right opposite the operation he performs, so when the order comes through it will have with it one ticket with the exact amount of elapsed time of each operator multiplied by their rate, giving you the exact and entire labor cost on this one original ticket. If your business is such that you wish a coupon tag to follow the work, each operator detaching a coupon to show what work he did, this Special Clock will stamp the elapsed time on his coupon, showing (if it is piece work), the comparison of piece price with an hourly rate.

If you prefer to keep a record of the various jobs a man works on in a day on one card or sheet, this clock will give you the elapsed time of each job on that same sheet, directly opposite the order he is working on, so that the total elapsed time will foot up to the exact working hours of the day, multiplied by the rate per hour will give you the amount of wages

(*Continued on page* 196.)

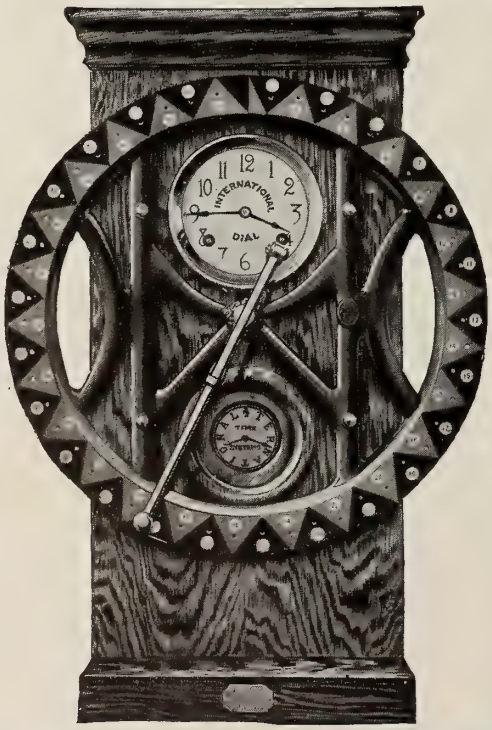


Have you ever asked the question: "What assurance have I that this pay-roll is OK?"

Right off the bat we make this statement: "Any 'OK' you may have is from a 'human factor,' and unless you use an International Time Recorder, you have no REAL protection."

It's a cold-blooded, unfriendly machine. It can't think, and it can't make mistakes. All it does is to see that you get every minute of working time you pay for.

Printed, unchangeable time records are made automatically, under lock and key, and these form your weekly pay-roll sheets.



Your business may be unusual, but we can give you a Time and Cost-Keeping System that will exactly fit it. We are the largest makers of Time Recorders in the World. Write us to-day for new folders and prices.

OUR SERVICE DEPARTMENT. We maintain a Service Department at our factory, that is at the call of our users at any minute. This Department employs only expert mechanics, thoroughly trained on the mechanism of all our recorders. We urge our customers to have their time recorders inspected at regular intervals.

International Time Recording Company of Canada, Limited

INTERNATIONAL TIME SYSTEMS

Toronto : Anderson St. F. E. MUTTON, Manager

Montreal : W. A. WOOD, Sales Agent
Corner McGill and Cartier Streets

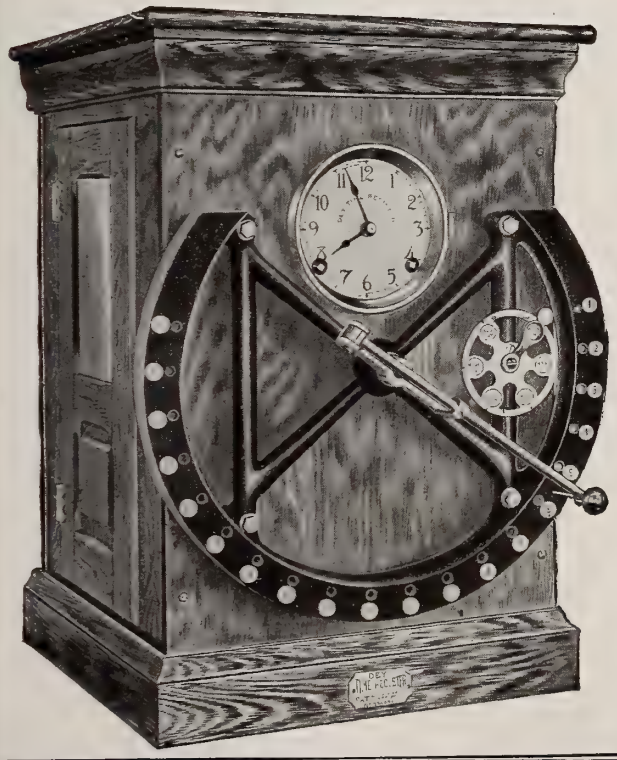


Here's the way to save a year's dividends

You have competitors? Yes! Look around and you'll see they use International Time Recorders. That's why they are SUCH competitors.

There's no argument about "working time" being the greatest of all raw materials you buy, yet many manufacturers permit four leaks a day in the supply every man on their pay-roll sells them.

"Walking time"—there's the biggest leak. The time the employees take *after* ringing in on the Recorder and *before* they get to work.



Check this loss. Put an International Time Recorder at the door of each department. Then it's up to the foreman to see that every man is busy at his bench or machine—and he'll do it.

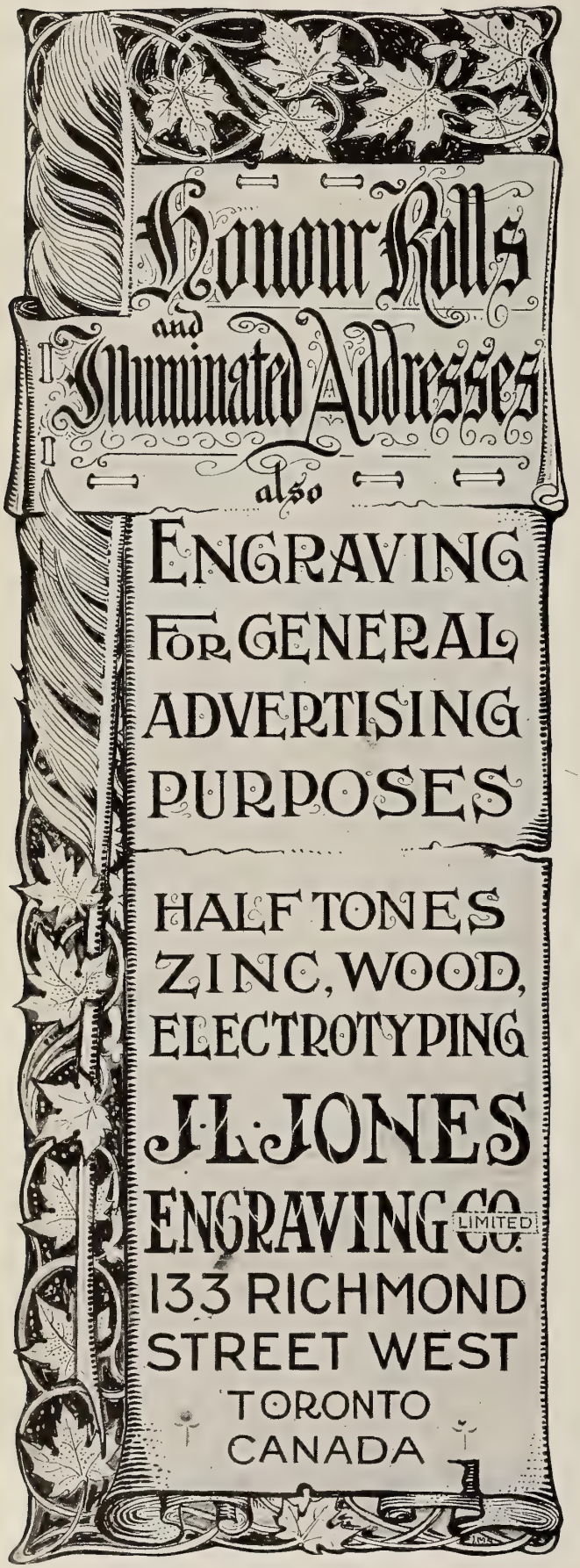
Our big, new Canadian factory is prepared to make a Time Recording system to exactly suit any business—even yours.

Prices and new literature on request. Write to-day for it. No time like the present to start saving money.

International Time Recording Company of Canada, Limited

Toronto : Anderson St. F. E. MUTTON, Manager

Montreal: W. A. WOOD, Sales Agent
Corner McGill and Cartier Streets



HOW TO GET THE ACCURATE COST

(*Continued from page* 193.)

you are paying the workmen, *thus proving* first the productive hours and minutes, second the wages you pay, third the absolutely accurate labor cost, fourth the accurate burden hour to figure the burden expense.

Again, with this Special Clock referred to above, you can obtain results in the quickest, simplest, most accurate as well as the most inexpensive way that has ever been devised. The expense of installing this system is but a drop in the bucket as compared with what it will earn for you. You cannot afford to be without it.*

*Parties interested should write for pamphlets and data to the International Time Recorder Co., Anderson Street, Toronto. This firm has made a life long study of time and cost recording systems, and they have collected thousands of reports dealing with all kinds of systems in use all over the world, which are available to Canadian manufacturers.

QUITE ANOTHER STORY.

Henry Doherty Silk Company, Paterson, N.J., got into a controversy with its employes over a demand for a shorter day.

President Henry Doherty, Jr., offered to turn the plant over to them to operate provided they guaranteed him 8 per cent. on his investment. He claimed that his offer was sincere and if the silk workers accepted they could work as few hours as they pleased so long as he got his guarantee. The offer was rejected by a majority of the discontented employes, who called it a "bluff," while others declared without training and experience it would be folly to attempt to run the business at a profit. We are not familiar enough with the proposition to comment one way or another, but the uncolored report of it, as carried by the press dispatches, holds more of the "facts of business, the relation between capital and labor," than any seventeen chapters of any text book on economics we have ever seen.

Condensed Advertising

HELP WANTED.

Wanted—Master mechanic with long and wide experience in machine shop practice and heavy mill construction and maintenance; in replying state references and experience. Address Box 123, Canadian Manufacturers' Association, Toronto.

FOR SALE.

Wood Mantel Patterns and Bill Boards, full sized working drawings, half-tone cuts and illustrations for advertising purposes, of two hundred different styles of design; also a number of woodworking machines, such as wood lathes, shaper, tenanting machine and saw, swing saw, buzz planer, rip saw, veneer presses, belt sander, jig saw, disc sander, etc., and a few thousand feet of plain and veneered mouldings; every one of these machines are as good as new; must dispose of the entire lot immediately, as we need our factory space for another line of business. If you are interested write Fox Bros. & Co., Limited, Windsor, Ont.

Do Your Windows Look

LIKE THIS OR LIKE THIS ?



Wire Window Guards

Cost just about the same as glass does. It will not take much figuring on your part to see where you can save money by preventing breakage of glass with wire guards.

Then they are safeguards against burglary too!

Would you not like us to figure on guarding your windows?

Write us to-day giving sizes.

THE GEORGE B. MEADOWS
Toronto, Wire & Brass Works Company, Limited
479 WELLINGTON ST. W., TORONTO, CANADA

"Metallic" Building Materials

Quickly Put-up Buildings Need Not Be Flimsy

They can be substantial, weather-proof, fire-retardant and very economical, if you use "M.R. Co." specialties Not only cheap to buy but cheap to put up, as they are quickly and easily handled by even "green labor."

"METALLIC" CLAPBOARD SIDING

Wood sheeting is unnecessary—you nail it direct to the studding. Handsome, durable, fire-retardant and "different."

"EASTLAKE" GALVANIZED SHINGLES

The pioneers, and leaders for 30 years in the metal roofing world. Fire-retardant, and very durable.

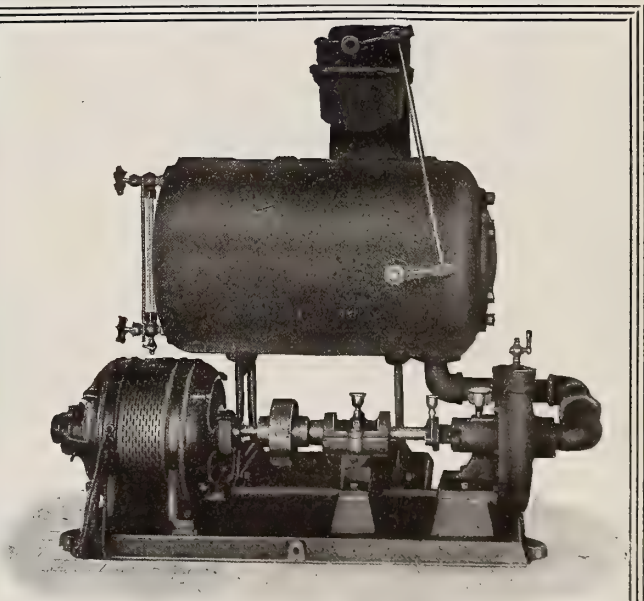
"EMPIRE" CORRUGATED IRON

Every sheet is true, uniform, full gauge, and properly galvanized.

Write to-day for prices and suggestions

THE METALLIC ROOFING CO., Limited
Manufacturers
TORONTO WINNIPEG





PUMPS FOR EVERY SERVICE

It will pay you to send us your inquiries when in the market.

THE SMART-TURNER MACHINE CO., Limited
HAMILTON - ONTARIO

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Calgary.

The large cement plant at Exshaw, Alberta, which, when working regularly, employs about 300 men, is reported to have been re-opened about the 1st of June, according to a statement of the manager of the Canada Cement Company at Calgary, A. H. McGuire. "The Calgary plant may be opened later," said Mr. McGuire, "but the Exshaw plant is the largest one in this district and the one best equipped to supply large quantities of cement at bottom cost of production because of its proximity to the cement rocks."

It is rumored that the Rumely Tractor Company will build a large tractor garage in this city at a cost of about $30,000.

Medicine Hat.

*Work on the construction of a new mill to replace the one destroyed by fire early last month was commenced about May 22 by the Lake of the Woods Milling Company. The new mill will be of steel and concrete construction.

The Dominion Harvester Co., whose plant was recently destroyed by fire, are making arrangements to start operations in another building. The company are in the market for machine tools and other equipment.

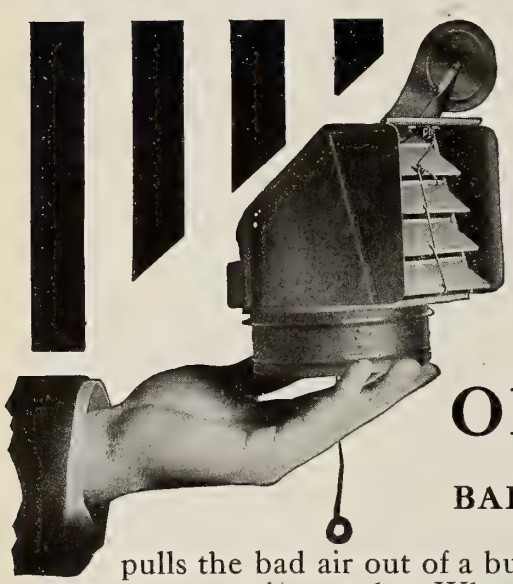
Redcliffe.

*In the course of a few days the property of the Redcliffe Rolling Mills and Bolt Company will be transferred to a new company to be known as the Canadian Western Steel Co., Limited. Following the transfer, steps will be taken immediately to install sufficient equipment to double the capacity of the plant. The Redcliffe Rolling Mills & Bolt Company have been in operation for four years. The mills are employing at present 200 men and orders are on hand to keep the plant busy for three months. The Canadian Western Steel Company is controlled by W. H. McLaws, of Calgary, and his associates.

BRITISH COLUMBIA.

New Westminster.

The B. C. Mfg. Company last month completed the purchase of the Abernethy & Lougheed Lumber Mill at Port Moody. The purchase makes one of the largest lumber deals put through in some time as the new owners take possession of the extensive plant of the Abernethy & Lougheed Company at Haney. A new company to be known as the Maple Ridge Lumber Company will operate the property.



It preaches Fresh Air

When our salesman calls on a prospective purchaser of Ormsby Swartwout Ventilators, he takes this little model with him. Better than a thousand words could do it, this miniature ventilator explains the principle of semi-mechanical ventilation.

Working on that principle, the

ORMSBY SWARTWOUT ROTARY BALL-BEARING VENTILATOR

pulls the bad air out of a building by the force of a partial vacuum. It affords constant air supply. When fitted with the self-cleaning pitched glass-top, it serves also as a serviceable skylight.

All sorts of work-rooms in factories, mills and foundries are successfully ventilated by Ormsby Swartwout. Send the coupon for "The Gospel of Fresh Air" — real stories of ventilation experience. It tells why ventilation pays.

Please send the "Gospel of Fresh Air."
Name.....Company.....
Address.....
.....(5122)

A. B. Ormsby Co., Limited
TORONTO
Associated with The Metal Shingle & Siding Co., Ltd., Preston, Montreal, Winnipeg

TANKS

FOR PULP AND PAPER MILLS, CHEMICAL WORKS, OIL REFINERIES, ETC.

STEEL STRUCTURES

TO SUPPORT TANKS

LET US FIGURE ON YOUR REQUIREMENTS

MacKINNON, HOLMES & COMPANY, Limited

SHERBROOKE, QUEBEC

JULIUS COHEN & JOSEPHY

Foreign Domestic **WOOL** *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO

Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative **13 Church St., Toronto**

Premier

MORE MILES PER GALLON

Gasoline

Experienced motorists know the value of getting, not merely good fuel, but the same fuel every time the tank is filled.

Premier Motor Gasoline is a homogeneous, uniform refinery product —the same wherever you buy it.

Polarine Motor Oil—the lubricant that never thickens from cold.

THE IMPERIAL OIL COMPANY
Limited

BRANCHES IN ALL CITIES

Shurly & Derrett, Limited

TORONTO



Manufacturers of

TWINES

COTTON AND JUTE ROPE

MILL & SPINDLE BANDING, etc., etc.

Vancouver.

A building permit has been issued to the B. C. Sugar Refinery for a large garage on Powell St., to cost $9,000. The building will be of one storey, and will be constructed of reinforced concrete.

MANITOBA.

St. Boniface.

Arrangements are being made by the Rice Malting Company of Canada, to rebuild their plant recently destroyed by fire.

Winnipeg.

*The Stovel Company, Limited, whose large printing and lithographing establishment was destroyed by fire early last month, have commenced the erection of a large new plant at the corner of Bannatyne Avenue and Dagmar Street. It will be nearly three times the size of the old building. The new structure will be eight storeys in height, will contain 8,400 square feet of floor space, and will be of reinforcced concrete construction. Immediately after the fire, orders were placed by wire for new equipment, and it is expected that part of the plant will be in running order in a very short time.

NEW BRUNSWICK.

St. John.

*What will be the first units in a fine new plant to be established by the old firm of T. McAvity & Sons, Limited, on a fine new site on Rothesay Avenue, are now in course of erection. These first units will consist of a large machine shop

THE NICHOLS CHEMICAL COMPANY, LIMITED
MANUFACTURING CHEMISTS
HEAD OFFICE: 222 ST. JAMES STREET, MONTREAL
Branch Office—120 Mill Street, Toronto
WORKS: Capelton, Que., Sulphide, Ont., Barnet, B.C. WAREHOUSES: Montreal, Toronto

Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
Muriatic Acid	Sulphide Soda	Blue Vitriol	Tri-Sodium Phosphate
Nitric Acid	Hypo-Sulphite Soda	Sulphate Alumina	Ammonia
Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
Mixed Acid	Phosphate Soda	Caustic Soda	Tin Crystals

Agents for Baker & Adamson's Chemically Pure Acids and Chemicals
AGENTS FOR CANADIAN SALT CO.—"WINDSOR" BRAND CAUSTIC SODA & BLEACHING POWDER

McClary's

Specialists in

HOTEL AND INSTITUTION KITCHEN APPLIANCES

and Manufacturers of the "FAMOUS" line of Goods including

Coal and Wood
FURNACES

Coal, Gas and Wood
STEEL AND CAST RANGES

Coal, Gas, Wood and Oil
HEATERS

ENAMELWARE, TINWARE AND OTHER KITCHEN WARE

LONDON TORONTO
MONTREAL WINNIPEG
VANCOUVER
McClary's
ST. JOHN, N.B. HAMILTON
CALGARY SASKATOON
EDMONTON



A Modern Industrial Plant Built Fireproof Kahn System

Daylighted with Kahn Steel Sash

E. A. Wallberg, Contractor

Dominion Tire Co. Building, Berlin, Ont.

Albert Kahn, Architect
Ernest Wilby, Associate

KAHN SYSTEM Reinforced Concrete

TRUSSED CONCRETE STEEL CO. OF CANADA, LIMITED

Head Office and Works - - Walkerville, Ont.

BRANCHES:

Montreal Toronto Winnipeg

KAHN SYSTEM Reinforced Concrete

You pay dearly for Lasting Service in a Building, if you Pay for It with Maintenance Losses. Get Permanence from the start-off without any added cost by using

PEDLAR'S "PERFECT" SHEET-METAL PRODUCTS

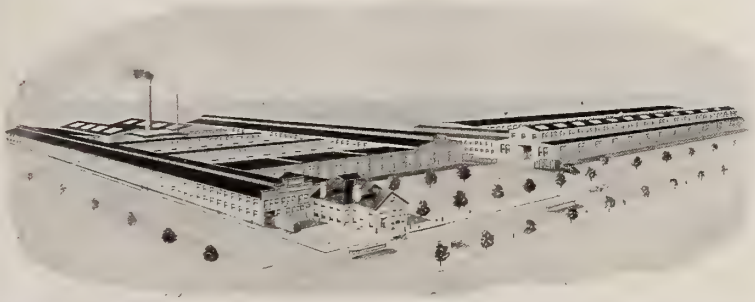
Bring safety, security and permanence to your buildings that reduce maintenance losses to the lowest possible margin. Cost no more than less protective and enduring materials.

Pedlar's Expanded Metal Lath for Walls and Ceilings of permanent smoothness.

Pedlar's Ferro-Dovetail Plates for acid-proof and Permanent Construction of Walls, Ceilings and Roofs.

Pedlar's Corner Beads, Channel Studs, Wall Ties and Wall Plugs for Safety and Protection in smaller details.

Pedlar's Saino Fire Doors wherever certainty of protection is worth having.



If you are out to get a more lasting, time-proof building without the waste of continual up-keep expenses, send for booklets and information regarding any or all of Pedlar's "Perfect" Products. Write for them to-day.

The Pedlar People Limited

(Established 1861)

The Largest Sheet Metal Factors in the British Empire

Executive Offices and Factories: OSHAWA, ONT.

Branches:
Montreal, Ottawa, Toronto, London, Winnipeg

81 feet wide by 401 feet long, with office accommodation at one end, and a power house 30 feet wide by 78 feet long. Both buildings will be of the latest type of factory construction with sprinkler fire protection systems, etc. The contract calls for the completion of the buildings by August 1st. In the meantime, the company continues to operate its brass and iron foundry and machine shop on the old site in the city.

ONTARIO.

Berlin.

The Schreiter Bedding & Mattress Company suffered a loss of $10,000 in a fire which visited their plant on May 6th. Walters & Son, furniture manufacturers, operating an adjacent plant, also suffered a loss of about $5,000.

*The Onward Manufacturing Company have a new factory building in course of erection at the present time. It will be 40 x 100 feet, three storeys high, of pressed brick and reinforced concrete construction, costing approximately $12,000. In the new building they will manufacture the following products: Onward Sliding Furniture Shoes, Eureka Electric Vacuum Cleaners, Domestic Hand Power Combination Vacuum Sweepers and Eden Electric Washing and Wringing Machines.

Brantford.

The contract for installation of a sprinkler system has been awarded in connection with the erection of a storage building for the American Radiator Company.

*The report current recently that American interests were contemplating the establishment of a woollen mill here proves to be of an indefinite character. Secretary Geo. Hately, of the Board of Trade, states that there has been some enquiry at the City Hall regarding such a project, but otherwise the matter has not come to the Board's attention.

Burford.

It is now reported that the new plant of the Canadian Milk Products Co., of Toronto, will be erected here instead of at Listowel as previously stated.

Campbellford.

Ratepayers recently carried a by-law granting a loan of $30,000 to the Northumberland Paper & Electric Co., to assist in rebuilding their plant which was destroyed by fire.

Chatham.

It is understood that the Chatham Construction Company has received the contract from the Dominion Sugar Company, for the erection of a large drying and storage building near the site of the big plant. Building operations were commenced last month.

An addition will be made to the premises of the American Pad and Textile Co., Queen St., at an approximate cost of $30,000.

Galt.

*The recent report that the Goldie & McCulloch Company, Limited, were making an addition to their plant is regarded by the company as somewhat premature, unless it refers to the construction of their new power-house, mention of which has already been made in these columns.

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,
188 Yonge St., Toronto



Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

By the Toronto Furniture Co., *Limited*

"MANY A THING DIVINELY DONE BY CHIPPENDALE AND SHERATON."—Andrew Lang.

OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

TORONTO FURNITURE CO., LIMITED

Show Rooms and Cabinet Shops: 163-187 Dufferin Street, Toronto, Canada

STRUCTURAL DETAILS

Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.



Look for the Shop Mark inside the drawer.

Production and Thrift

CANADA'S CALL FOR SERVICE AT HOME

Produce More and Save More

The Empire needs food. If you are not in the fighting line you may be in the producing line. Labour is limited—all the more reason to do more than ever before. Grow food for the men who are fighting for you. The Allies need all the food that you can produce. Every little helps. You are responsible for your own work. If you cannot produce as much as you would like, produce all you can. Work with the right spirit. Put fighting energy into your effort and produce now when it counts. The more you produce the more you can save. Producing and saving are war-service.

Make Your Labour Efficient

In war-time do not waste time and energy on unimportant and unprofitable work. Economize labour. Put off unproductive work till after the war, and, if possible, help in producing something needed now. Let us not waste labour. Canada needs it all. If possible help to feed the Allies. Make your backyard a productive garden. Cultivate it with a will. Make your labour count for as much as possible.

Do Not Waste Materials

There should be no waste in war-time. Canada could pay the annual interest on her war expenditure out of what we waste on our farms, in our factories, in our homes. Every pound of food saved from waste is as good as a pound of increased production. The way for a nation to save is for every individual to save. France is strong to-day because of thrift in time of peace. The men and women of Great Britain are not only "doing" but are learning to "do without."

Spend Your Money Wisely

Practise economy in the home by eliminating luxuries. Wasting our dollars here weakens our strength at the Front. Your savings will help Canada to finance the war. Save your money for the next Dominion War issue. There can be no better investment.

THE GOVERNMENT OF CANADA 5

THE DEPARTMENT OF AGRICULTURE THE DEPARTMENT OF FINANCE

Guelph.

*The Raymond Manufacturing Company, Limited, which has been making sewing machines here for nearly fifty years, has been taken over by the White Sewing Machine Company of Canada, Limited, a newly organized corporation with an authorized capital of half a million. The White Company has been considering taking over the Raymond Company for some years, but the matter only came to a head since the war started, the extra duty of 7 1-2 per cent. on the importation of manufactured goods from the United States being considerable handicap to the White people. Extensive improvements and enlargements are planned by the new company. A twenty-two acre site in St. Patrick's Ward has been secured by the company, and on this they will erect a new and modern sewing machine factory to cost $200,000, which will be two or three storeys in height, and will be built on the most modern lines. The manager of the Canadian plant of the White Sewing Machine Company will be Mr. G. S. Hedley, of Cleveland. Incidentally, it might be noted that the cream separator and electrical supply business of the Raymond Manufacturing Company will not be taken over by the new corporation, who intend to devote their efforts exclusively to the manufacture of sewing machines.

Hamilton.

Foundation work for the new plant of the Mercury Mills, Limited, is now well under way, and construction of the buildings will be started shortly. The new plant will be located on Cumberland Avenue, at the east side of the city, and will consist of four buildings, for the present. No. 1 mill with dyehouse, which faces on Cumberland Avenue, will be approximately 400 feet long and 92 feet wide, the picker building and boiler house being located in the rear of the large mill. All buildings have been so located upon the property to allow for future development of the plant. All buildings in this group will be of reinforced concrete construction, in accordance with the latest engineering practice. The flat slab, or mushroom, type of floors will be used. It is intended by the owners to construct a plant which will be modern in every detail, and nothing has been overlooked which will add to the comfort of their operatives. This company now operate mills at Dundas and Hamilton, which plants will be consolidated at one point when the new buildings are finally completed. With favorable weather conditions, the contractors hope to have the new plant ready for occupancy the latter part of September. The new plant has been designed by Chas. T. Main, engineer, 201 Devonshire Street, Boston, Mass.

Contracts have been let in connection with the erection of an addition to the premises of the Zimmerman Manufacturing Company.

The Cary Safe Company is contemplating the erection of a plant for the manufacture of safes, vaults, doors, etc.

*Owing to the enormous number of grinding wheels now being used in Canada, the Canadian Hart Wheels, Limited, manufacturers of corundum, emery and gresolite wheels, have been compelled to add a fourth fifteen-foot kiln to their plant, also increasing their floor space and equipment. In addition to this, they have added to their silicate department a brick building of about 100 feet square to enable them to keep up with their delivevries from this department.

T H-E

Toronto is a mighty good place

for manufacturers to locate. Many excellent reasons. One of the best is the very cheap power, for which Toronto Hydro has been responsible. Send us your inquiry and see how much money we can save you on power for a Toronto plant.

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Under the agreement with the Board of Control, the Hamilton By-Product Coke Ovens Company will commence at once the erection of its ovens here, the same to be completed and in operation in 1917. To take care of the intervening time, the United Gas & Fuel Company has agreed to make such extensions to its artificial gas plant as may be required to maintain a supply of gas equal to the demands.

Some extensions are being made by the Grasselli Chemical Company to their plant here in order to enable them to keep up with the demand for certain of the chemicals which they produce. The extensions will cost about $30,000.

Two additions, 20 x 100 ft. and 40 x 80 ft., respectively, are being made at the plant of the Dominion Sheet Metal Company.

Harrow.

The W. Clark Company, Montreal, propose building a cannery here. R. Findlay, Montreal, is the architect, and the approximate cost is $15,000.

Mitchell.

The Mitchell Woollen Mills will make an extension to their plant. The cost will be about $5,000.

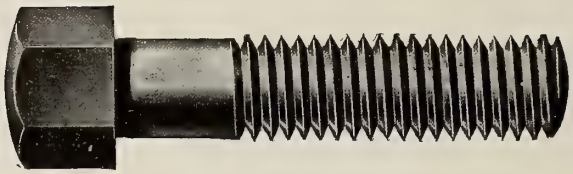
New Toronto.

*During the summer the Goodyear Tire & Rubber Company of Canada, Limited, will erect three buildings on their new 27-acre factory site lying between Ninth Street on the east, Eighteenth Street on the west, Birmingham Street on

John Morrow Screw and Nut Company Limited

INGERSOLL, ONTARIO





We are making it a point in our business policy to take care of all our customers requiring standard lines we manufacture, and although we are in a position to do this fairly satisfactorily, would ask customers to specify as far ahead of their actual needs as it is convenient for them to do, and we will do our part.

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who complains of his tools, as a general rule. But he's a poorer workman who, knowing his tools are inefficient, does not complain.

Educate your men to turn in their files the moment they reach their "inefficient point." That will give them no excuse for poor work.

The cost of the extra files will be much less than the loss in labor, time and mental energy spent in using files that have worn smooth.

Send for a copy of our book, "File Filosophy." It is worth the while of any manager, factory superintendent, shop foreman and workman to read it.

The Famous Five are:

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Great Western
American
Arcade
Globe

(Made in Canada)



the north, and the Lake Shore Road on the south. One building, 100 x 560 ft., four storeys and basement, will be devoted to the manufacture of pneumatic tires. The other buildings will contain a steam plant, cement plant and a two-storey garage. It is expected to have these buildings ready for occupation about January 1st. In the meantime, the company will continue to operate its plant in Bowmanville, manufacturing hose, belting, packing, molded goods, carriage tires, motor truck tires and neolin.

Niagara Falls.

*The Blystone Manufacturing Company, Cambridge Springs, Pa., who were recently reported to be about to erect a plant here for the manufacture of concrete machinery, state that they will not do anything towards putting up their plant this coming summer.

*The American Cyanamid Company are enlarging one of the departments of their plant in Stamford Township at an approximate cost of $20,000. The foundations were put in last month, and steel is now being erected.

Ottawa.

The Burrows Refining Company, 629 Wellington Street, are about to commence the erection of a nickel refinery, estimated to cost $6,000. Ironclad and frame construction.

Tenders on the erection of a $30,000 brick factory for the Grant, Holden & Graham Co. are now being received by the architect.

Owen Sound.

The plant of the Union Cement Works Company was recently damaged by fire. Loss, $4,000.

Peterborough.

The new Rudkins Brass & Iron Company foundry in Peterborough, Ont., is now in operation, under the management of Mr. William Rudkins, and is filling a large number of orders. Additional machinery is to be installed and work will be proceeded with on a much larger scale than at present.

Port Arthur.

The building at the plant of the Western Drydock and Shipbuilding Company, in which were housed the pipes, pattern and electric departments, was totally destroyed by fire last week. The loss is roughly estimated at $25,000.

Port Hope.

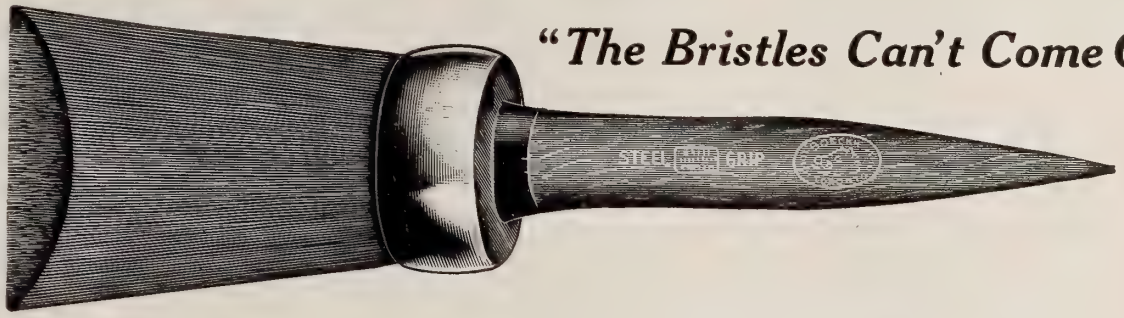
The by-law to grant exemption to a new manufacturing industry for Port Hope was carried by the ratepayers. S. E. Brandon, care of Boyd-Brandon, Limited, 68 Yonge Street, Toronto, is head of the new concern.

Preston.

The Solid Leather Shoe Company are building an addition to their factory.

Renfrew.

The Renfrew Electric Mfg. Company have commenced the construction of a brick and concrete addition to their premises, to cost about $5,000.



"The Bristles Can't Come Out"

"Steel Grip" PAINT & VARNISH Brushes

work easy and have a good body stroke, being resilient and elastic. They spread the paint or varnish evenly and produce a perfect and attractive finish—no loose hairs to mar the job.

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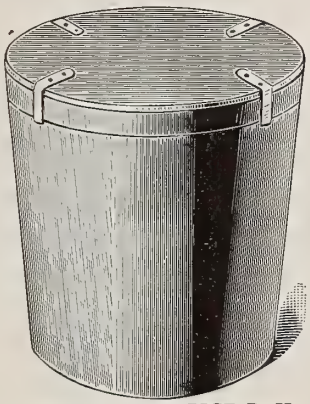
TORONTO : CANADA



ROUND BOTTOM FIRE PAIL

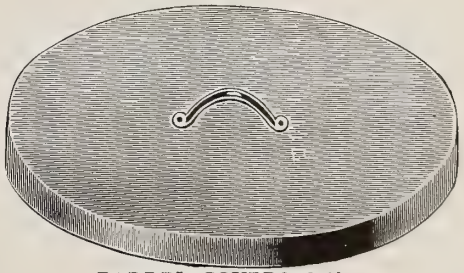
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MONTREAL, CANADA

St. Catharines.

*Dominion Foods, Limited, manufacturers of Wethey's Mince Meat, Upton's Pure Fruit Jams and other food products, are at present building an addition to the plant, which they established here in 1913. The addition consists of a brick warehouse and office, two storey and basement, 95 x 75 feet.

*Most of the machinery for the new plant of the Marathon Tire & Rubber Company has now been received, and it is expected that the production of tires will commence very soon. The company, it will be remembered, is affiliated with the Marathon Tire & Rubber Company of Cuyahoga Falls, Ohio, and the president and vice-president of the American company are directors of the Canadian company. The new building, which has been erected on Vine Street, is 60 x 264 feet, one storey in height, and will be equipped with machinery sufficient to turn out 100 tires and 100 tubes in 10 hours. The goods will be made complete from raw rubber.

*The McKinnon Dash Company, manufacturers of carriage and saddlery hardware, have found it necessary, owing to the rapid development of their business, to make a considerable addition to their plant. They are erecting a new building, 70 x 300 feet, three storeys in height, and are also installing an up-to-date drop forging plant.

*The Canadian Aloxite Company, Limited, the recently organized subsidiary of the Carborundum Company, are at present erecting a plant on a site of eight acres purchased from the Canadian Niagara Power Company, a short distance south of Montrose Junction There will be a main furnace building 60 x 220 feet, with other buildings for the receiving of the ore, making the furnace mixtures and accommodating the crushing machine, etc. The plant, which will be ready

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by the 1st of August, will be employed in the manufacture of aloxite and abrasives now used by the Carborundum Company in the manufacture of its various products.

Sarnia.

The cost of building the proposed new flax mill in Sarnia, which is to commence shortly, is estimated at $15,000.

Simcoe.

It is reported that the Hall Glove Co., Jersey City, N.Y., will build a branch factory here at an approximate cost of $25,000.

The factory of the Lampkin Pump Works was recently destroyed by fire.

Stratford.

*The Williams-Trow Knittting Company, Limited, are at present erecting a warehouse for the storage of cases during the rush season. The company report that they have room enough in their present plant to take care of all the additional machinery installed this year.

Steelton.

The Algoma Steel Corporation are erecting a shell cutting building at an approximate cost of $12,000.

Toronto.

The Imperial Oil Company has made application to the city for the purchase of a waterfront site on which to erect a plant.

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The T. Eaton Co. have started work on the construction of a large factory building on Teraulay Street.

A contract has been let for a $6,000 brick and steel addition to the plant of the Sheet Metal Products Company of Canada.

The City Architect issued a permit to the E. W. Gillett Company, Limited, Fraser Avenue, to erect a grain elevator and mill at Pardee Avenue and Liberty Street, at a cost of about $13,000.

T. A. Russell, representing the Russell Motor Company, has made application to the York Township Council for a fixed assessment for 20 years on 30 acres of land and a factory, which it is proposed to build near Weston. The first cost of the buildings will be $100,000.

The Campbell Flour Mills Co., Limited, Cawthra Ave., will build a cooperage plant to cost $5,000.

The Martin Pump and Machine Co., Limited, propose to start work shortly on the erection of a brick factory at Wilton and Broadview Avenues. Estimated cost is $10,000.

The Flint Varnish & Color Works, who are erecting paint and varnish works on Perth Avenue, expect to have their plant ready for operation about July 15th. In addition to the buildings which were already on the property and which were formerly used by the Dominion Carriage Company, the new owners are erecting sixteen fire stacks, a gumming room and a thinning room. It is the purpose of the company to manufacture only the highest quality of varnishes and varnish color paints to be used on automobiles, pianos and high class furniture.

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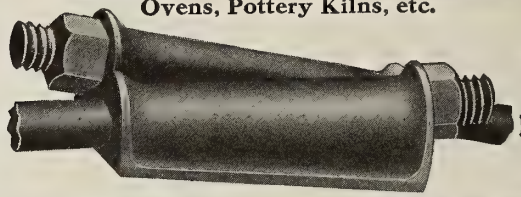
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and show you how to reduce insurance costs 50% to 80%.

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Welland.

The Canada Forge Plant is to be further enlarged at a cost of $50,000. This announcement was made by T. J. Dillon. The present addition is to be a steel and brick building, 227 feet long by 60 feet wide, with crane runway extension 150 feet long, equipped with electric cranes and loading rack for the inspection and shipment of shells.

PRINCE EDWARD ISLAND.

Summerside.

*The Prince Edward Island Brick & Tile Company, whose capital of $15,000 has been subscribed by people all over the Island, are establishing a plant about thirteen miles from here for the manufacture of brick and land tiles. The raw material on their property, which has recently been inspected by the Provincial Government, is pronounced to be one of the best adapted clays in Canada for the manufacture of brick and tiles. The land is in close proximity to the Prince Edward Island railway and when the car ferry is placed in operation between the Island and the main land, the Company will be in a position to ship its products to all parts of the Maritime Provinces. The services of an expert from Upper Canada have been procured and the plant is now under construction. As the Provincial Government has just passed a law which will permit of the loaning of money for drainage purposes the company will doubtless derive great benefit from the new legislation.

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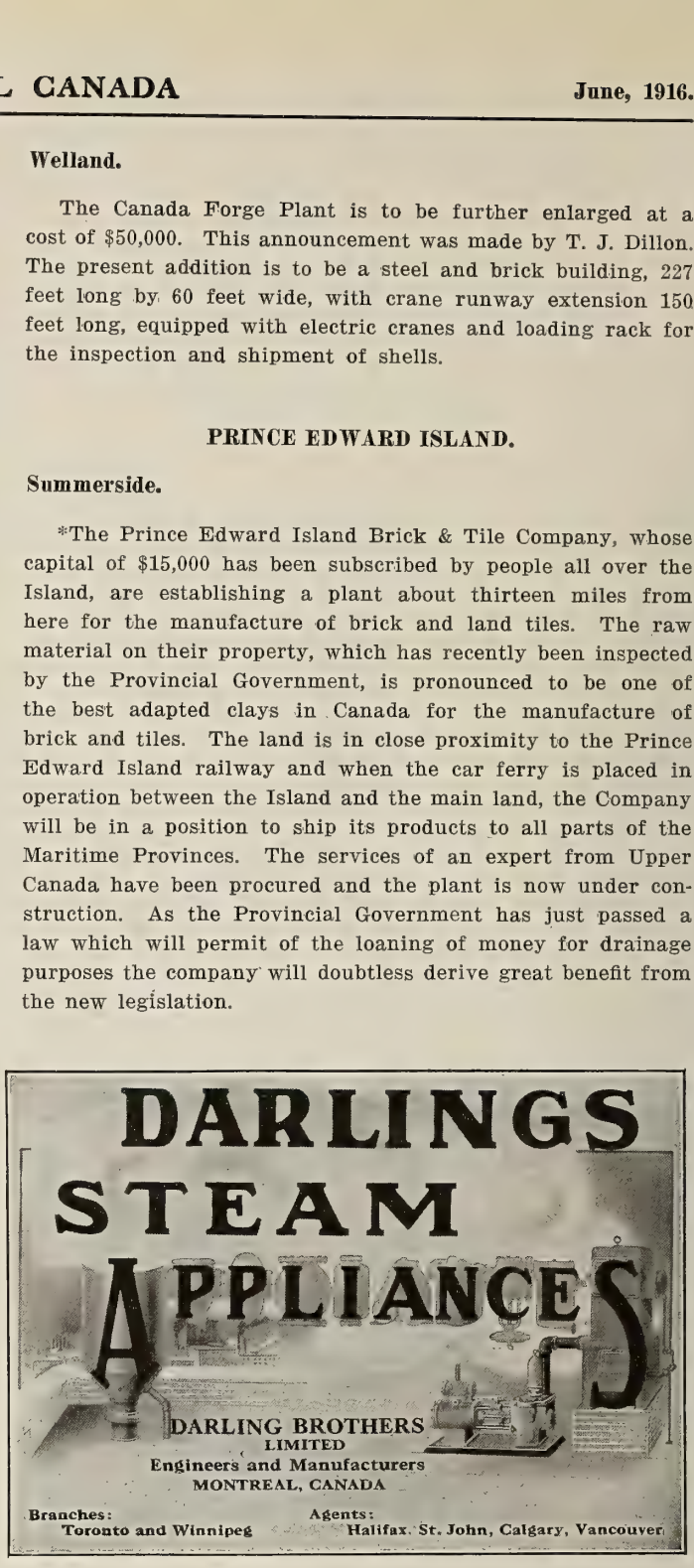
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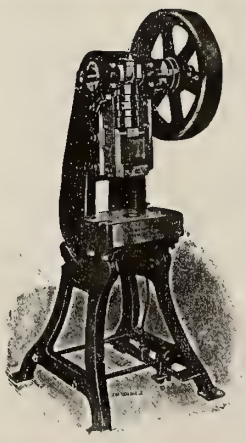
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are efficient watchmen and firemen. They are in every part of the building all the time and quickly put out the small blazes and save disastrous ones.

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QUEBEC.

Montreal.

McArthur, Irwin, Limited, paint manufacturers, announce that plans are now approved for a new paint plant to be erected at once. The new plant will be the latest word in construction and its machinery and appliances will incorporate the latest improvements. A. W. Poole, formerly sales manager of Brandram-Henderson, Limited, has become associated with the organization as Manager of the paint and varnish works.

The Canadian Tube & Iron Co., 107 Hamilton St., have started the construction of a small brick and concrete addition to their plant.

*The Columbus Rubber Company of Montreal, Limited, are making an addition to their rubber boot and shoe factory which will enable them to manufacture 5,000 pairs a day, practically doubling their present capacity. The new building will be taken over about the middle of June.

Maisonneuve.

The Montreal Last Co., 562a La Salle Ave., are making an addition to their premises.

Montmagny.

*A section of the plant of the General Car & Machinery Works, Limited, was destroyed by fire last month with a loss of about $300,000. A new plant was in course of construction and this will be completed as quickly as possible so that the industry can continue without much loss of time.

COTTON & WOOL WASTE

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Washed Cotton Wipers

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Penmans

Underwear, Hosiery and Sweaters
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Lumbermen's Socks, etc.

Factories at

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Penmans LIMITED

PARIS : : : CANADA

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MANUFACTURERS OF

WHITE VICTORIA LAWNS

WHITE NAINSOOKS

and

DYED COTTONS

OF EVERY DESCRIPTION

Quebec.

*The Dominion Corset Company are building an extension to the factory which they erected five years ago. The addition will be 120 x 56 feet, four storeys high, of mill construction, similar in type to the original factory.

SASKATCHEWAN.

Regina.

The big plant which the Imperial Oil Company is constructing here will be three times as large as originally proposed, its cost amounting to $1,500,000. In the neighborhood of 500 men are at work laying the foundations for steel tanks.

Moose Jaw.

Rumors are current here that the Lake of the Woods Milling Co. will build a mill in Moose Jaw. It is understood that negotiations for a property are already under way.

THE VALUE OF TRAVEL.

A certain amount of travel means as much to a business man as a pinch of salt does to a piece of meat.

"I haven't had a vacation in four years," said one factory manager to another. "There are always so many things here that require my attention that I haven't been able to see my chance to get away from one year's end to the next."

"That's not it," said the other. "The fact is that you get in a rut and don't know it. You don't get far enough away from your work to get the right perspective. If you could go away for a few weeks you could look back and laugh at some of these little things that you have allowed to chain you down for four years. When you get far enough away big things look little, and when you get too close to little things they look big."

"Yes, I know," said the first, "but my work is different."

"Not a bit of it," protested the other. "I used to think that myself, but once I had to take a trip for sad, personal reasons, and I discovered that the world really went on about the same. Since then I have frequently taken a trip and it always puts new vigor into my work. I begrudge neither time nor money spent in the right kind of travel.—*The Dodge Idea.*

EXPORTERS OF
Reed Organs, Piano Stools,
Music Cabinets.
Catalogue B.

The Goderich Organ Co. Limited
GODERICH, CANADA

Closet Seats,
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Everything for the Bath Room.
Write for Catalogue C. and Price List.

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Capital Authorized - - -	$25,000,000
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Reserve & Undivided Profits	$13,236,000
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The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

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CANADIAN NATIONAL EXHIBITION

Toronto, August 26th—1916—September 11th

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NOTICE

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H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

Hon. JAS. S. DUFF,
Minister of Agriculture.

W. C. McGHIE,
Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID,
Minister of Public Works.

D. M. MEDCALF,
Chief Inspector of Steam Boilers.

Established 1849

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BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economiq Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co,, Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
*Canadian H. W. Johns-Manville Co., Toronto.
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, heating
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement See Index, Page 113

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BRONZE, Cored Bars
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Boeckh Bros. Co., Toronto.

BRUSHES
*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited, Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS AND CLOCK MOVEMENTS
The Arthur Pequegnat Clock Co., Berlin, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COFFEE IMPORTERS, Roasters and Manufacturers
C. H. Cochrane & Co., Ottawa, Ont.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited, Toronto.

*For Display Advertisement See Index, Page 113

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED BOXES
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORRUGATED PAPER
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.
Canadian Wm. A. Rogers, Ltd.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons. Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*Canadian H. W. Johns-Manville Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peck & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
Gurney Foundry Co., Limited, Toronto.
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, house and office
Canada Furniture Mfrs., Limited, Woodstock, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
Gurney Foundry Co., Limited, Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

* For Display Advertisement See Index, Page 113 *

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Toronto.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MEATS, canned
The Wm. Davies Co, Ltd., Toronto.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement See Index Page 113

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited. Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor. Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A, Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd.. Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement See Index, Page 113

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited. Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERWARE
Toronto Silver Plate Co., Limited, Toronto.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*For Display Advertisement See Index, Page 113

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKETS, gray iron and flint rim
*Canadian Link Belt Co., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Sirocco Co., Windsor, Ont.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Pedlar People, Ltd., Oshawa, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Henry Hope & Sons, Ltd., Toronto.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.

TELEPHONE ACCESSORIES
*Northern Electric Co., Limited, Montreal.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

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Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

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Gurney Foundry Co., Ltd., Toronto.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SURFACERS
*Berlin Machine Works, Ltd., Hamilton.

SWITCHBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd.. Brantford.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

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THEATRE CURTAINS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSMISSION MACHINERY
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*The Canadian Sirocco Co., Ltd., Windsor, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

TUMBLERS, foundry
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte, Ont.

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
John Morrow Screw and Nut Co., Ltd., Ingersoll.
Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Kerr Engine Co, Ltd., Walkerville.

VALVES, for steam and water
Jenkins Bros., Ltd., Montreal, Que.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
*Dougall Varnish Co., Ltd., Montreal.
R. C. Jamieson & Co, Ltd., Montreal, Que.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL BOARDS
*Bird & Son, Hamilton, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que

WASHERS
*The Steel Company of Canada, Limited, Hamilton.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATER-PROOF CEMENT COATING
Benjamin Moore & Co, Ltd., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

*For Display Advertisement See Index, Page 113

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.

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Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.

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Coniagas Reduction Co., Ltd., St. Catharines, Ont

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*Berry Bros., Ltd., Winnipeg, Man.

WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

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*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES
Daly & Morin, Montreal, Que.

WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

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*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

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*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.

WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.

WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

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*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

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Standard Fuel Co., Toronto.

WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SPLIT PULLEYS
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*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

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*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.

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*The Steel Compony of Canada. Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement See Index Page 113

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CONVENTION NUMBER

Vol. XVII., No. 3 JULY, 1916 $2.00 per Year

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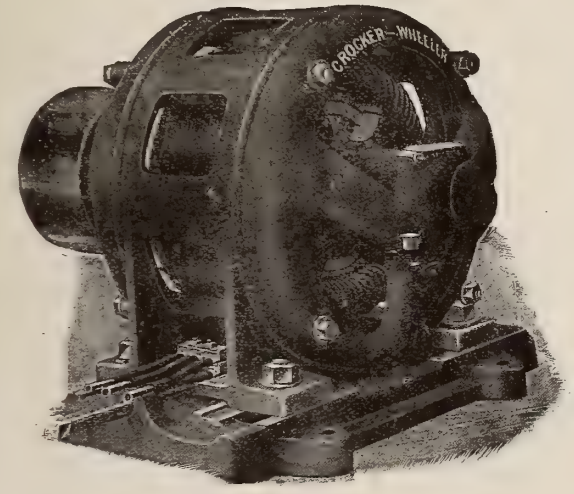
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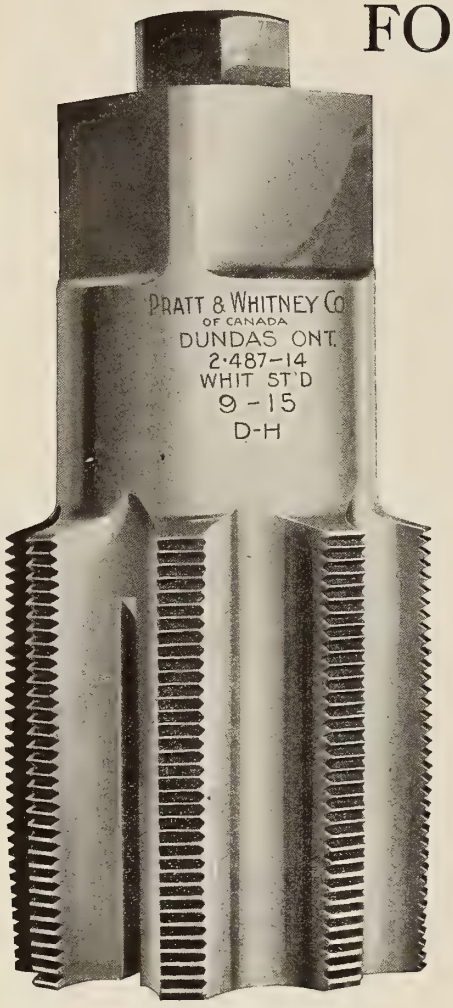
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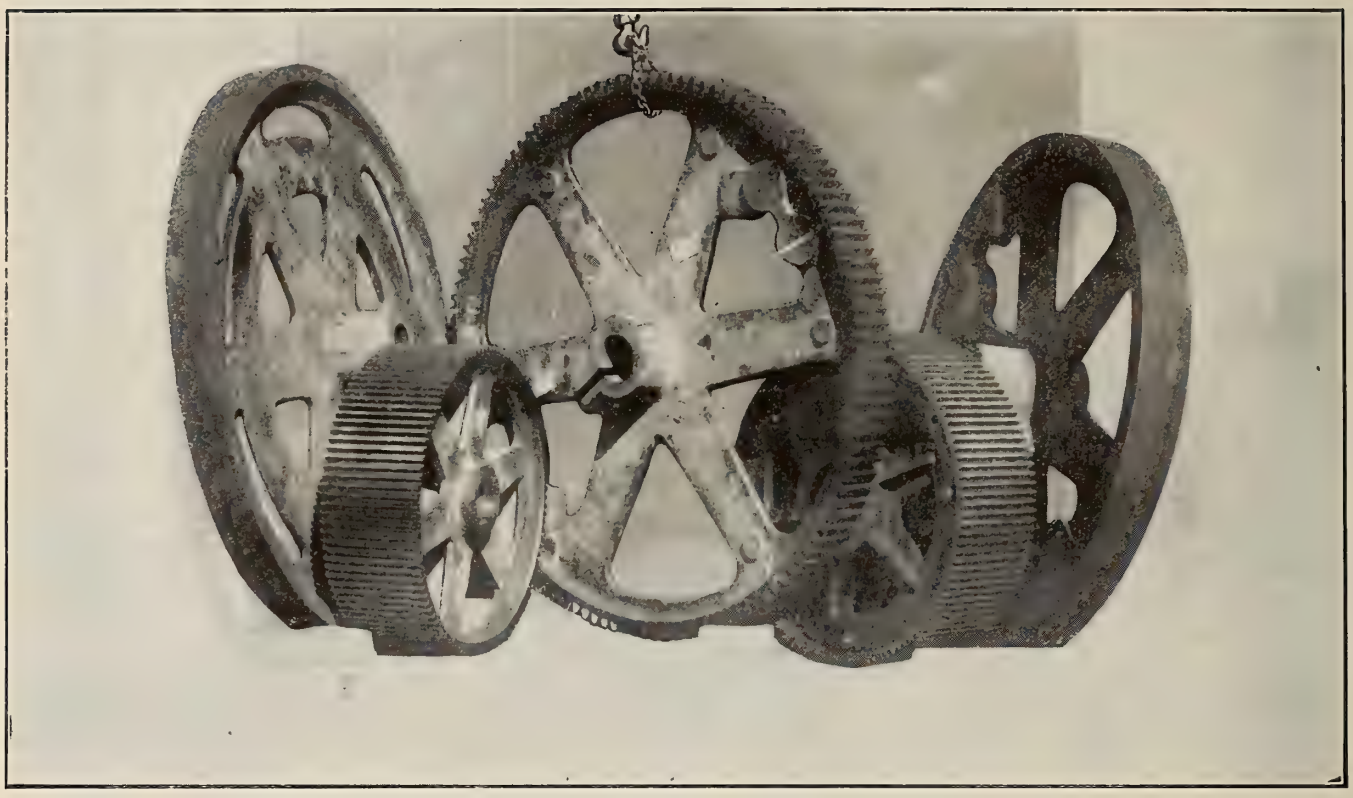
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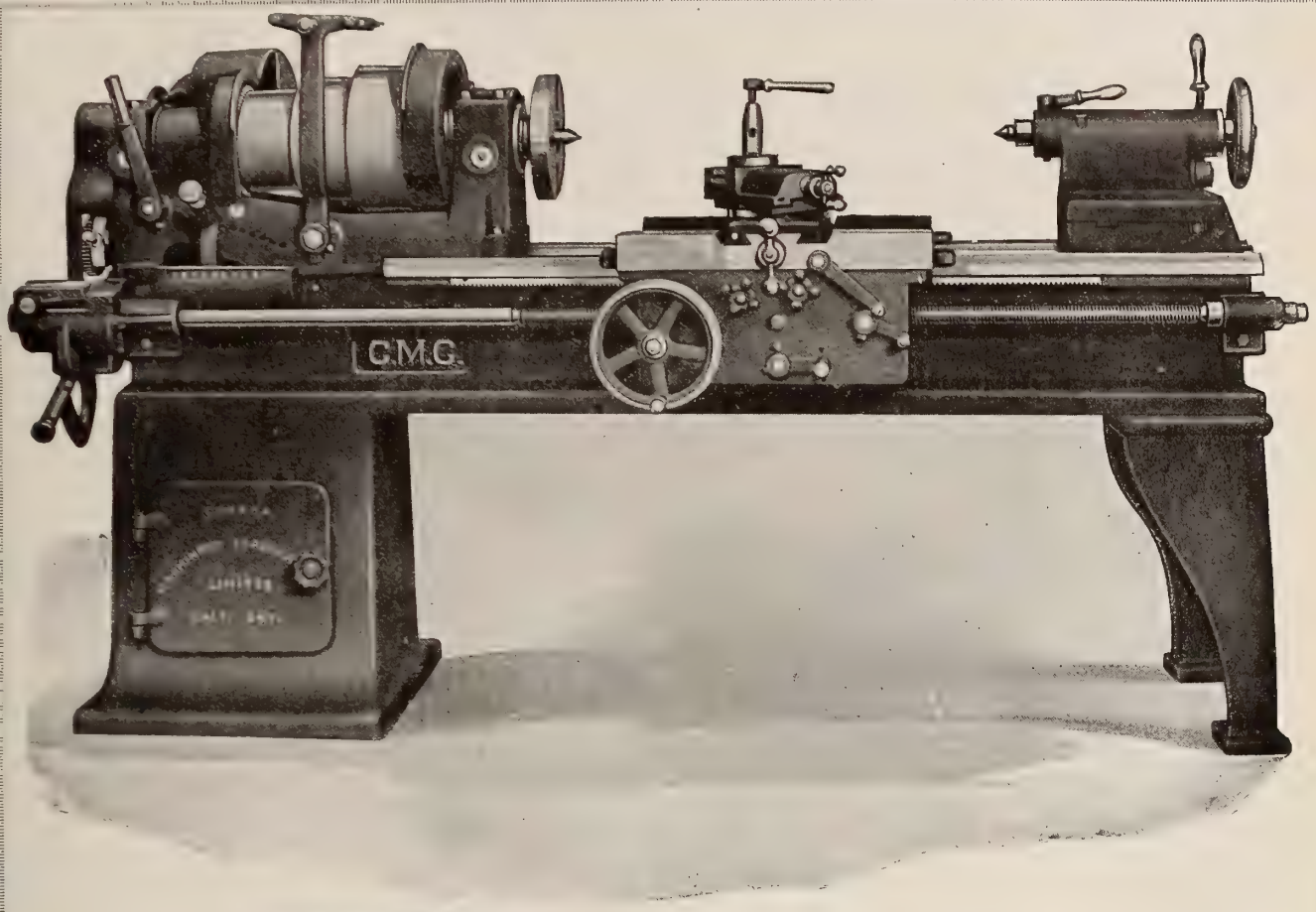
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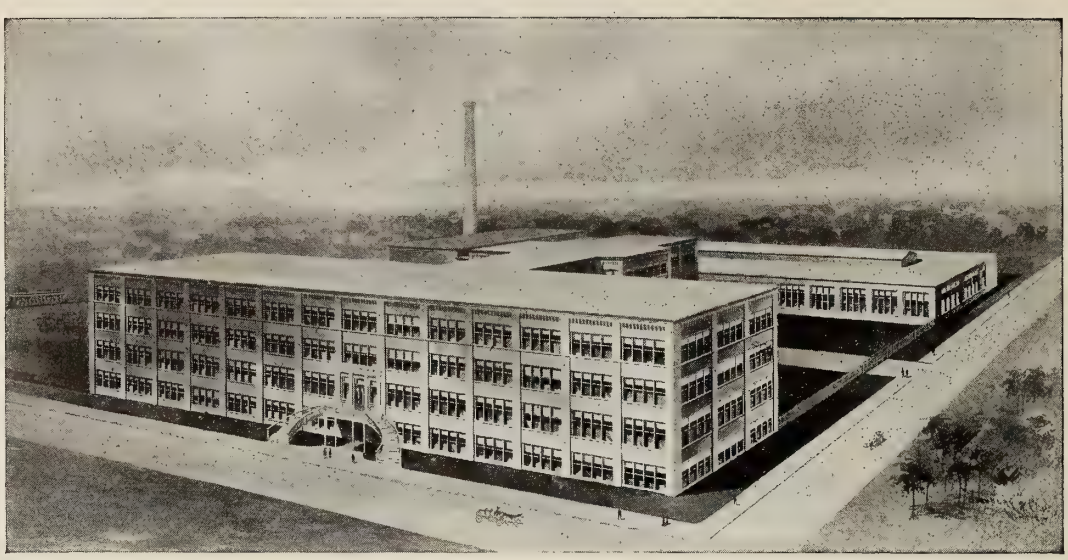
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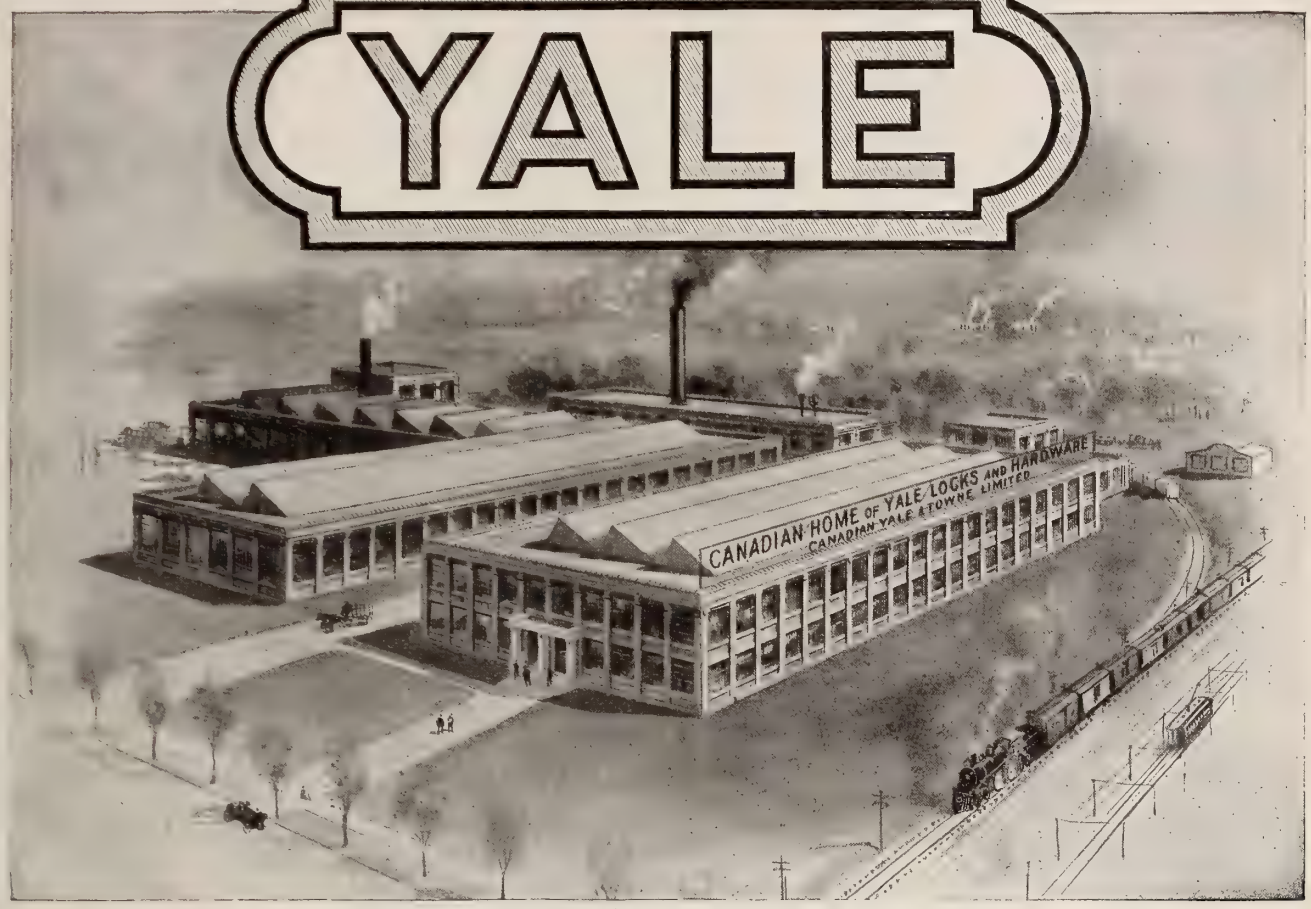
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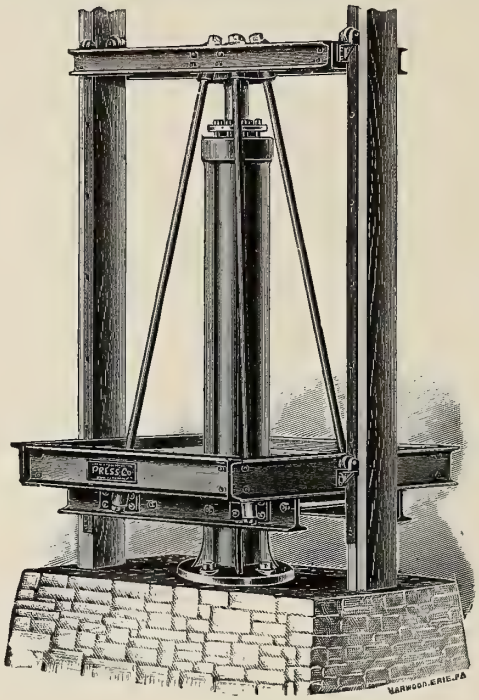
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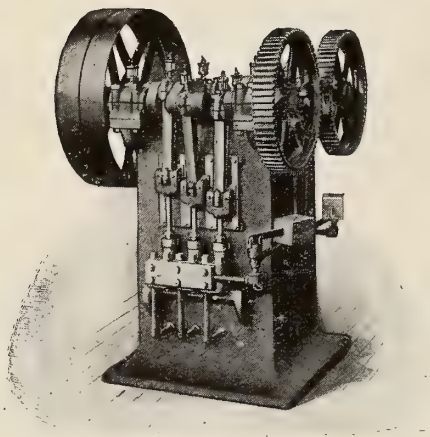
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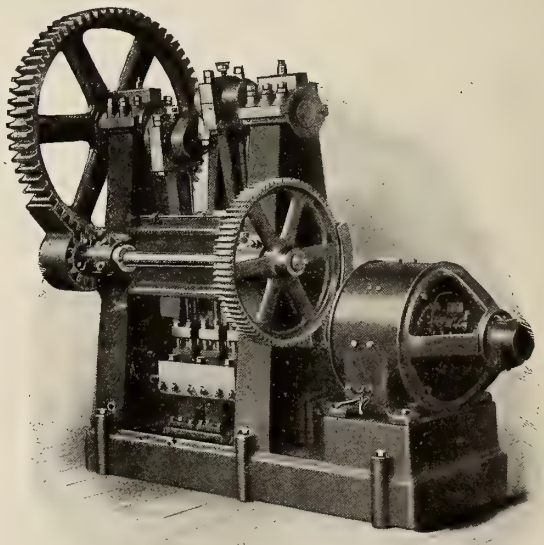


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ENCLOSING a photo of two bull elk shot with his Ross .280, Mr. Ralph Edmunds, of Idaho Falls, Idaho, wrote us on Dec. 7th, 1915 :

> "....:...This last hunt, the Ross (.280 High Velocity) was the whole show although there were five other rifles along, and they fired twenty shots to the Ross' one, and yet out of fourteen elk killed the Ross got eleven."
>
> ".....This gun does what I have read that other guns would do, but they all failed in the test until I bought this gun of yours. No more misses within shooting distance—no more long tramps after wounded animals.....When that Ross bullet struck them they crumpled up like a house of cards.....After it happened eleven times, I knew it was not by accident they were killed so dead....."

The above extract expresses, better than anything we can say, the sentiments of hunters and guides towards the Ross .280 as well as the reason of its popularity.

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The .303 Sporting Models are also most popular among experienced Canadian Sportsmen. They are reliable and accurate weapons, following closely the lines of the Ross Military Rifle and using the easily obtainable .303 British Ammunition.

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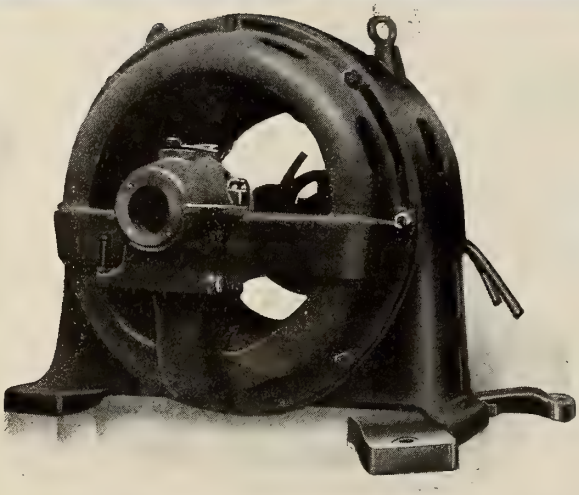
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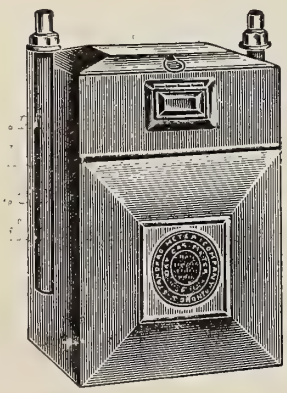
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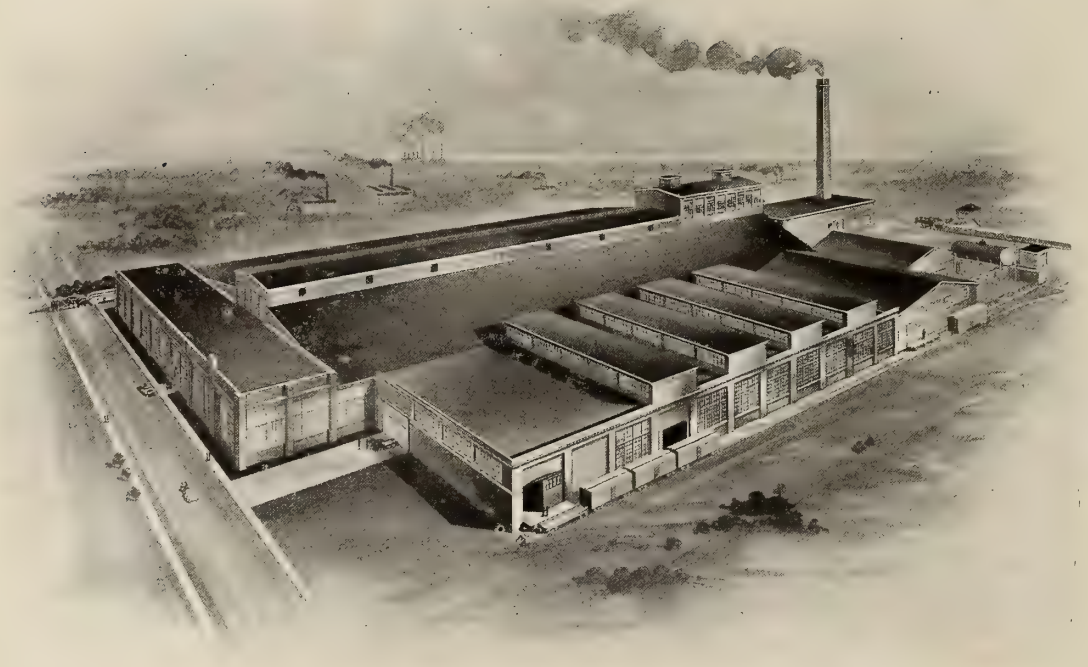
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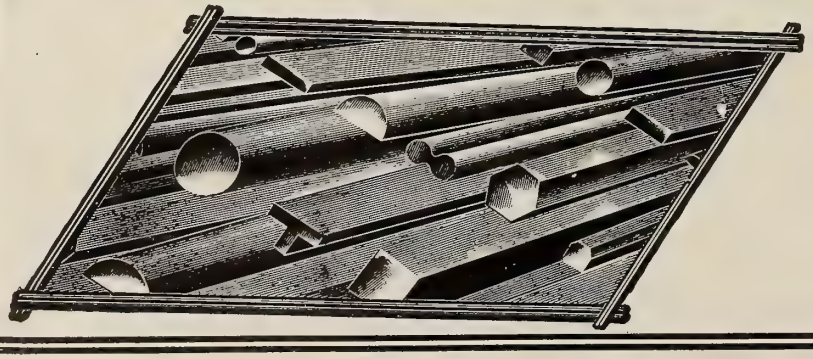
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Send your butter to town in Eddy's Indurated Fibreware Butter Pail and insure it reaching its destination in a perfectly sanitary condition.

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Goodhue Belting for Hard Work

In a Goodhue Belt you get only the best leather, tanned in our own tannery, with most of the stretch taken out of it. A Goodhue Belt will always run evenly and straight, and cling to the pulley, transmitting 100% of your power.

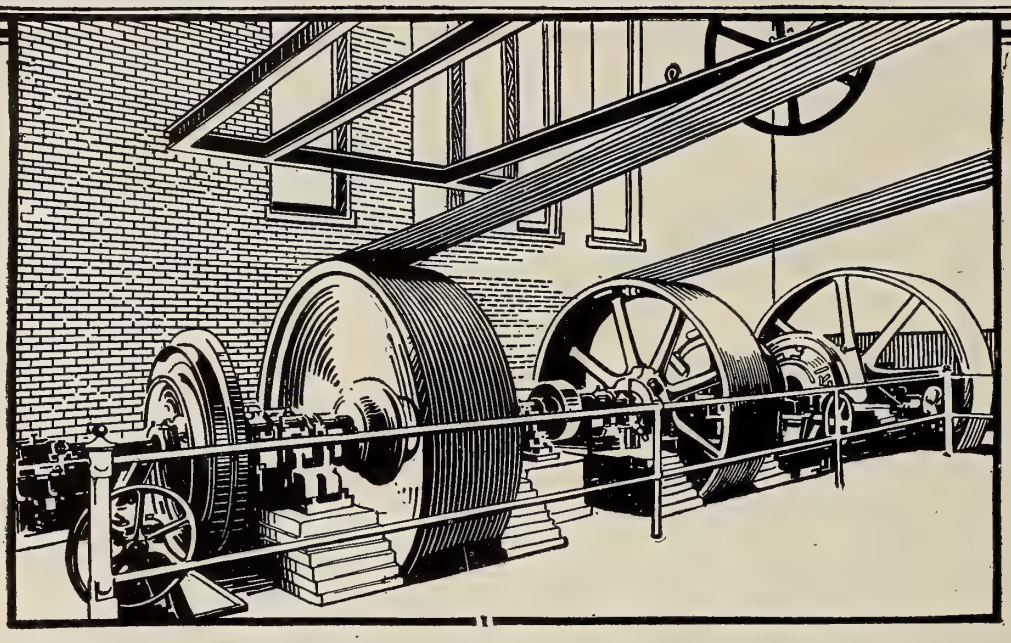
For the wet places in the mill, we make a special Waterproof Leather Belt **"Acme."** Other Goodhue Belts are **"Extra"** and **"Standard,"** recommended according to the conditions under which the belt is to run. *Write us for Prices.*

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WHILE the Rope Drive was never intended to replace the Belt Drive indiscriminately, it has its own distinct field and the experienced engineer fully recognizes this.

The principal advantages of transmitting power by means of a Rope Drive are: convenience in many forms of transmitting power, economy in cost and maintenance, ease and simplicity of distributing power giving a positive drive, smooth-running and noiseless.

For heavy drives where the centres are excessive, or unusually close, or for drives at an angle, or from one building to another, and where a specially positive drive is desired, there is no substitute for the Dodge Rope Drive.

We design—manufacture—and install—Rope Drives for Pulp Mills, Paper Mills, Saw Mills, Textile Mills, Grain Elevators, Rolling Mills, etc.

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Our 30 years' experience in Rope Drive Engineering is available to large power users. Send for information blank. We are Rope Drive Experts.

16

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The Truck for All Canada

National Trucks are making a new name for Canada-built Motor Vehicles. Many Canadian Business Houses are using National Trucks in their delivery and haulage systems, because they give Better Service. Every National Truck sold has been a success, because they are built right.

The National Guarantee is the most liberal guarantee ever given with a motor truck. The Free Service which is included with the guarantee is only one of the special features that make the NATIONAL Motor Truck the best buy in Trucks to-day.

The complete list of specifications of each of the five models is in the new de luxe edition of the NATIONAL catalogue. Copy will be gladly mailed upon request.

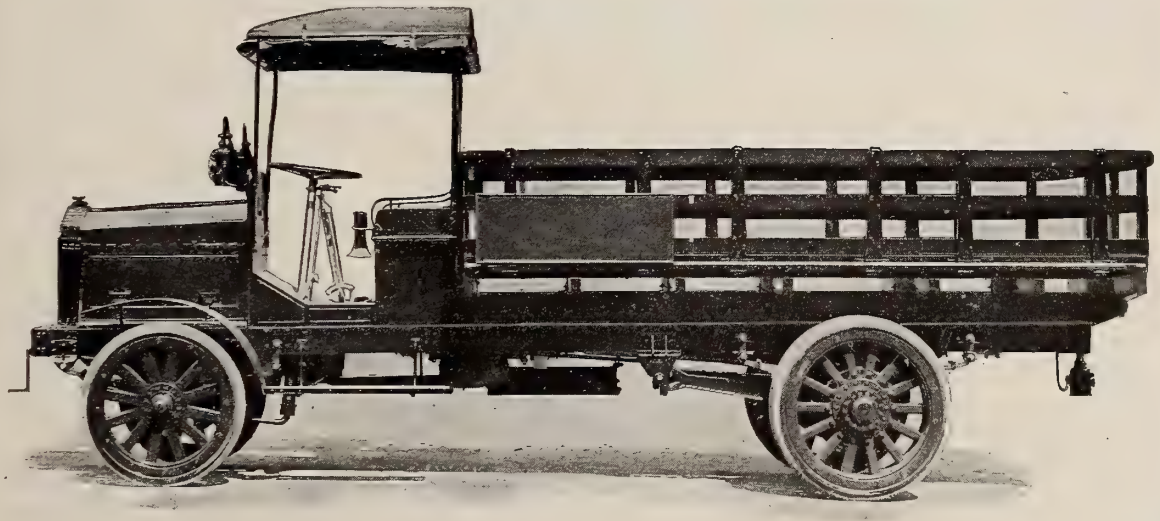
Five Models : 1500 lbs., 2000 lbs., 3000 lbs., 4000 lbs., 7000 lbs.

Address Truck Dept. for full particulars and catalogue.

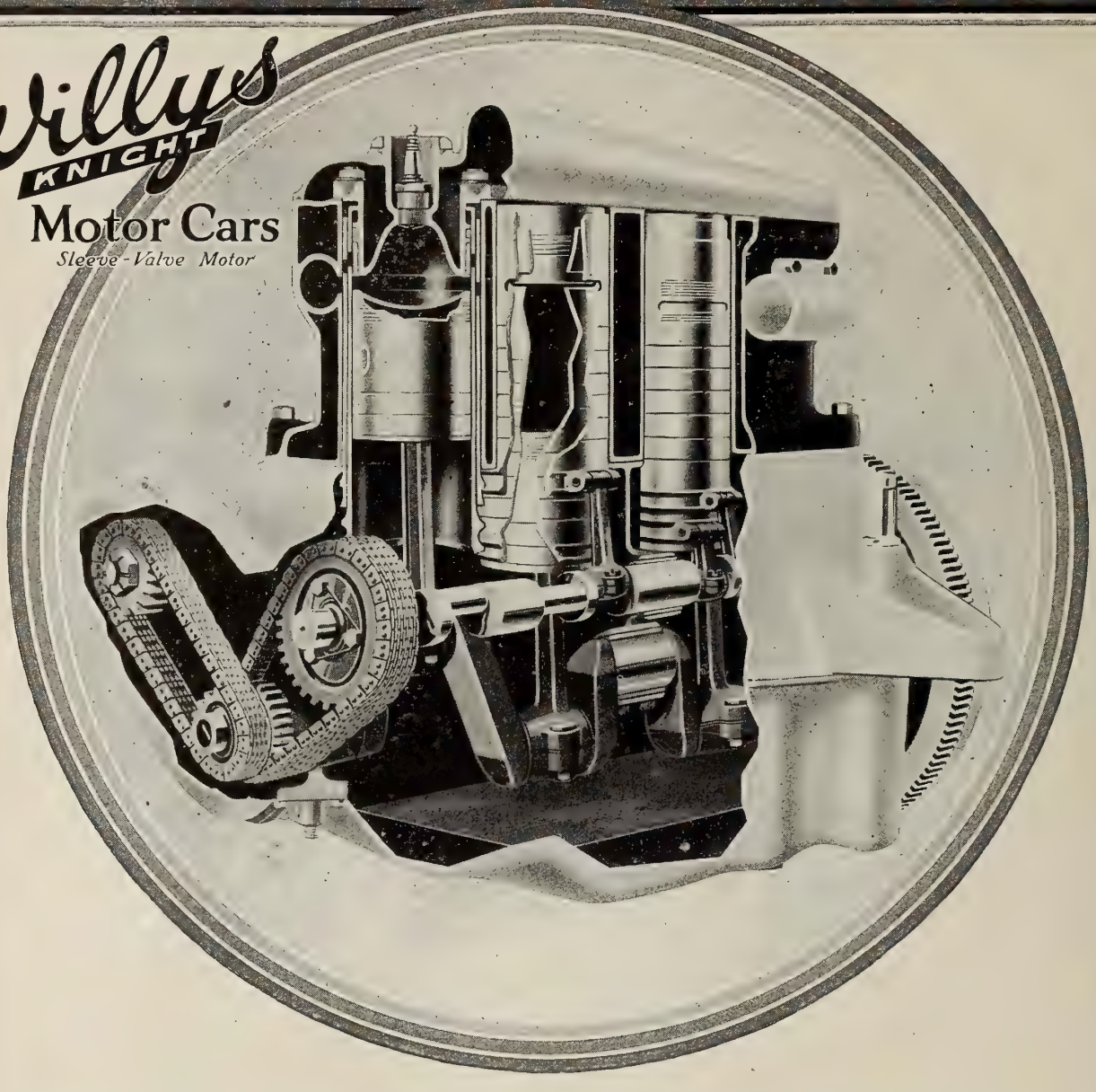
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Motor Cars
Sleeve-Valve Motor



Sleeve-valve Advantages Are Well Worth While

Here's what our experience with sleeve-valve motors on a big production scale has brought home to us.

For one thing—and it is a very significant thing — those who buy sleeve-valve motored cars never want to go back to any type of poppet-valve motor.

It is mighty pleasant to watch their growing attachment for the sleeve-valve type of motor.

At first it is the power and flexibility of these motors which win admiration.

For it is a fact that, size for size, cylinder for cylinder, the sleeve-valve motor delivers more power and has greater range on direct drive than any other type of motor

That's one big positive sleeve-valve advantage.

Next in order, as one learns to appreciate sleeve-valve advantages, comes its improvement with use.

Men who have owned cars with the usual motor equipment have grown accustomed to the ills which come with age in ordinary motors.

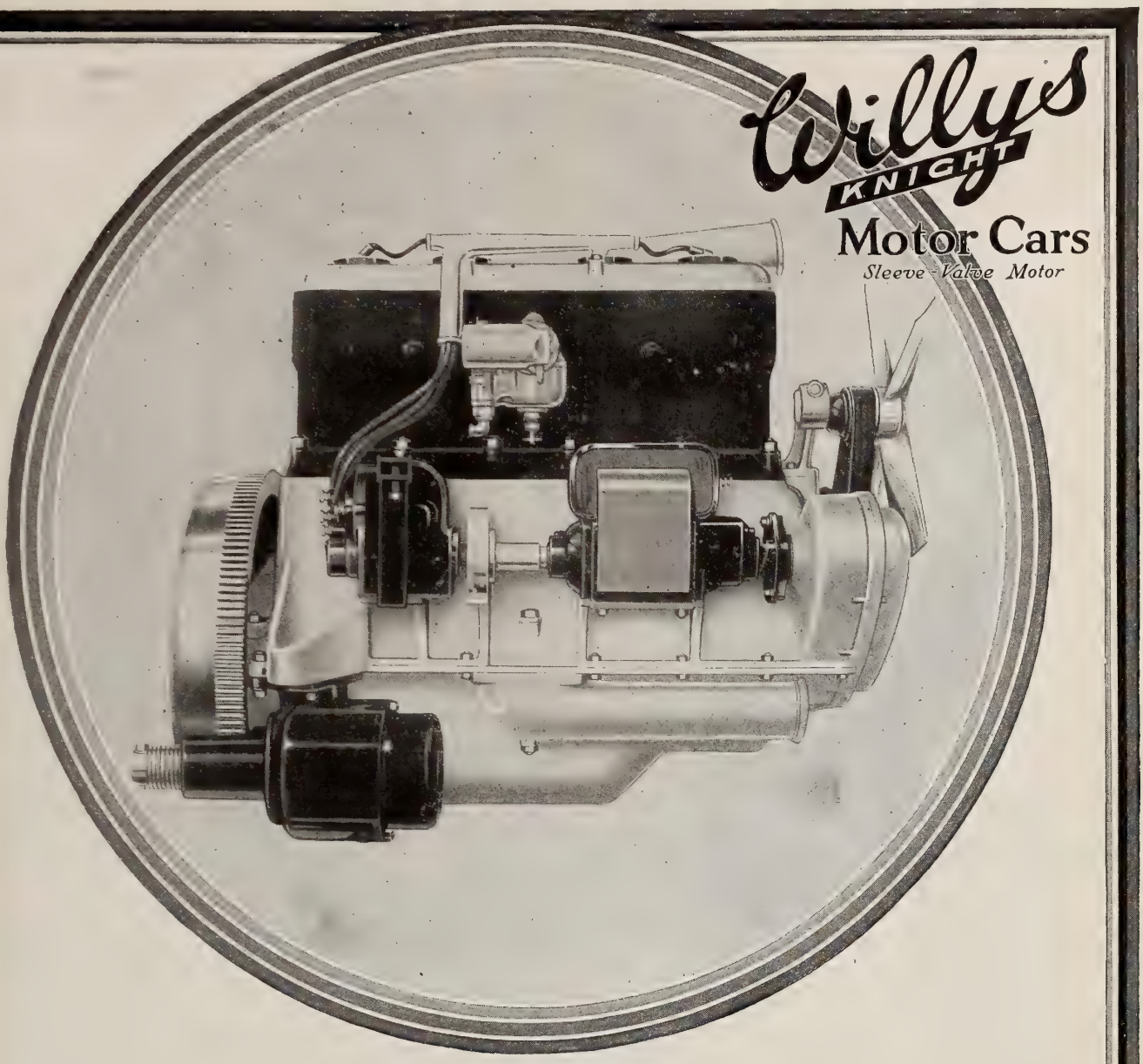
They expect a certain perfection of performance in a new motor but they do not expect it to last.

They expect to have to lay it up every once in a while to have the carbon cleaned out and the valves ground and reseated.

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Longer Life—Increased Power—Greater Flexibility

So when a motor car veteran finds his sleeve-valve motor running quieter and with even greater power and pep as his mileage piles away up into the thousands his admiration is strengthened by a growing respect for his motor's continuous, uninterrupted performance.

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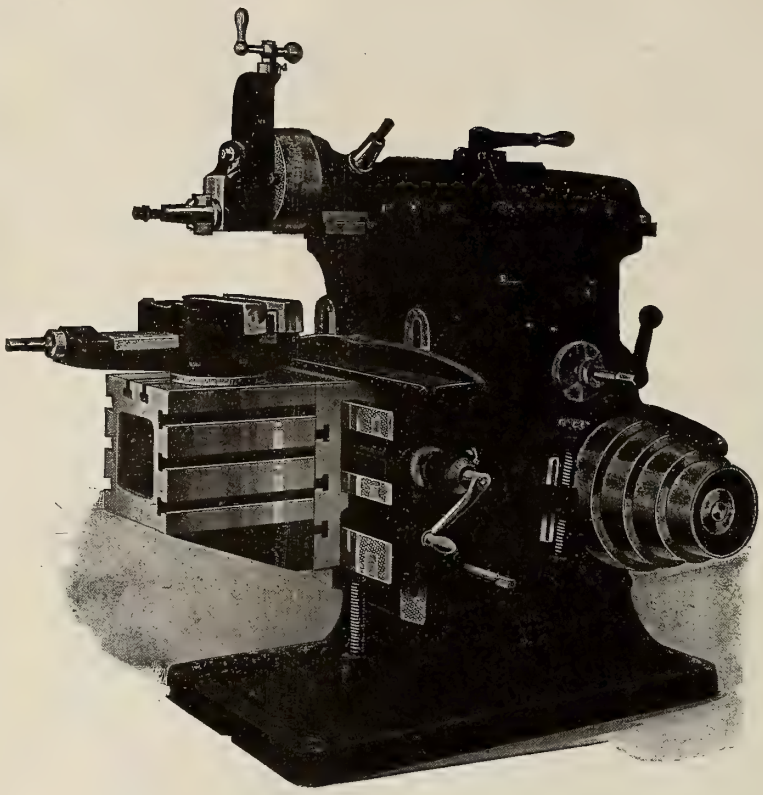
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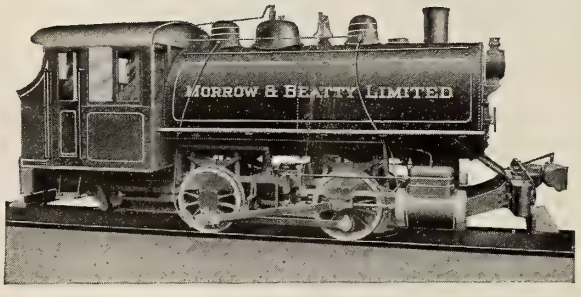
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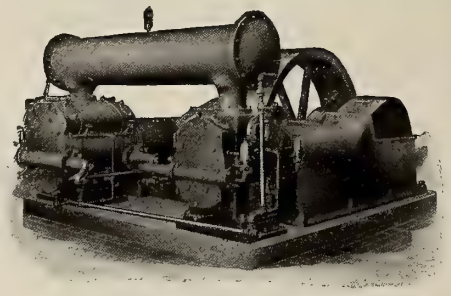
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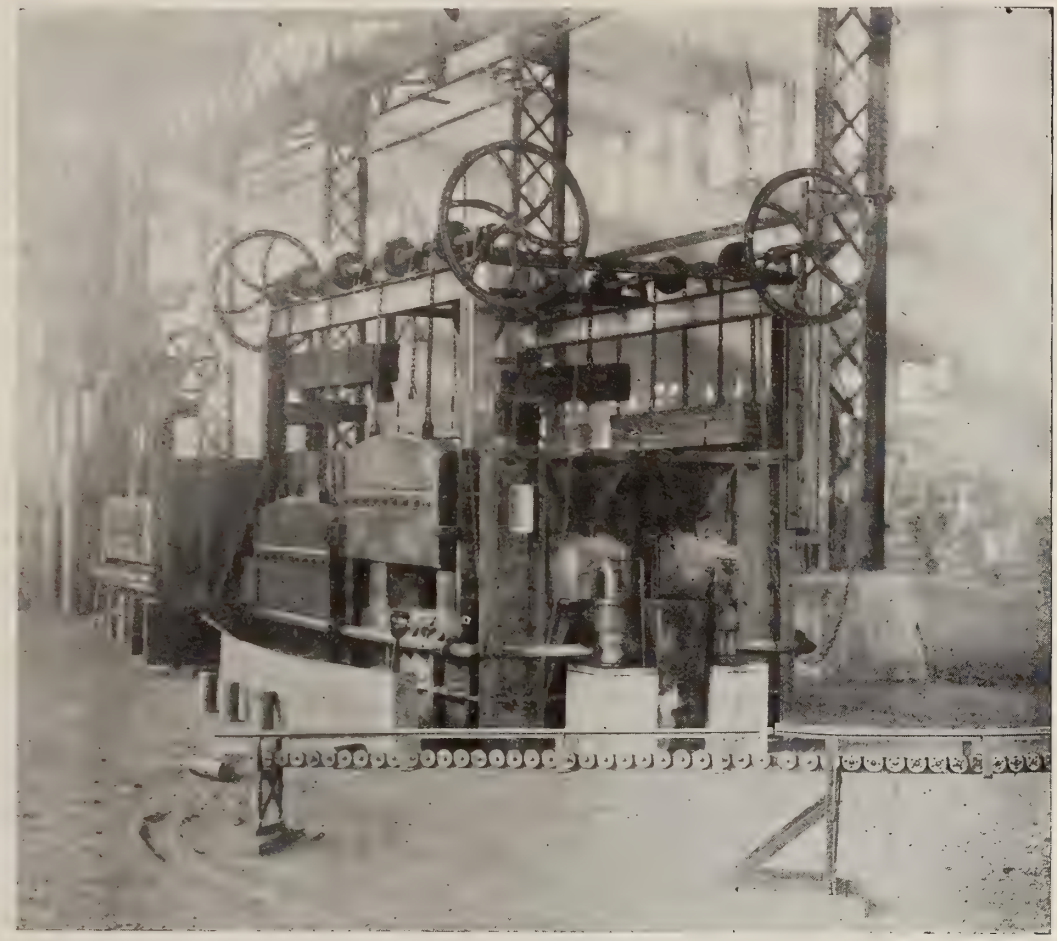
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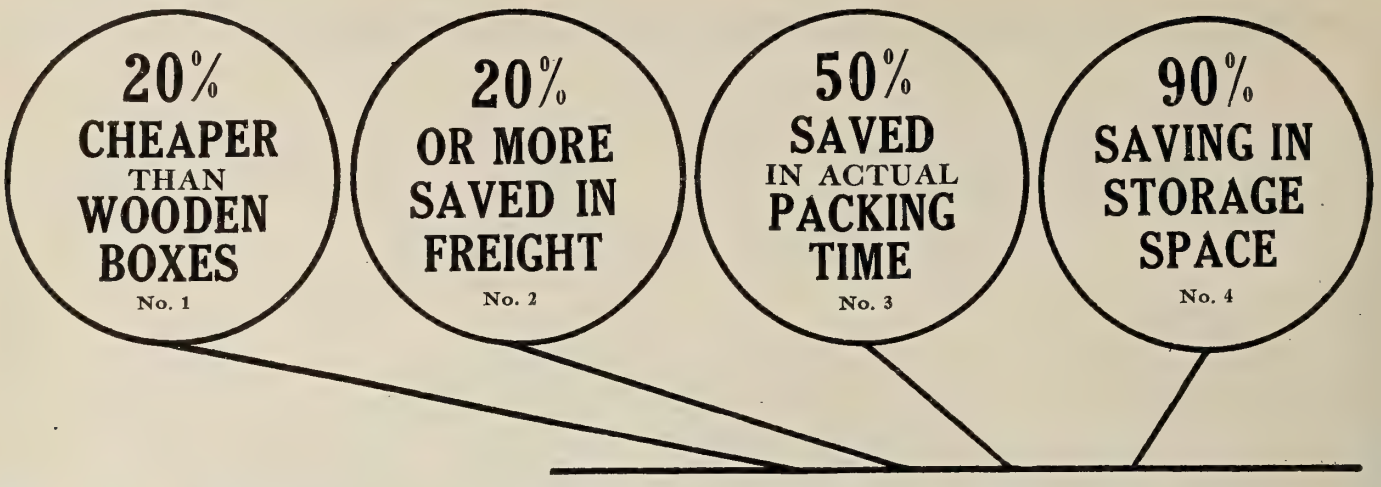
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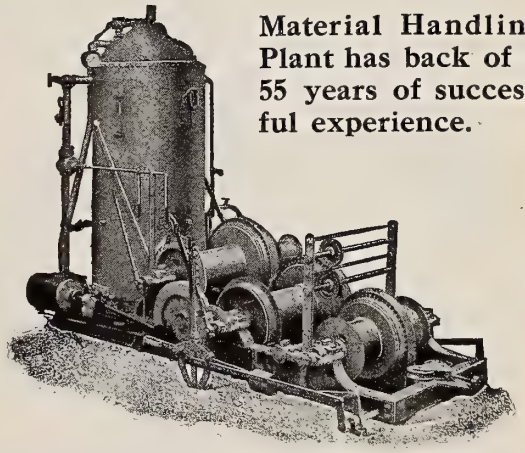
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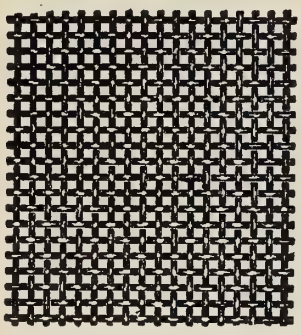
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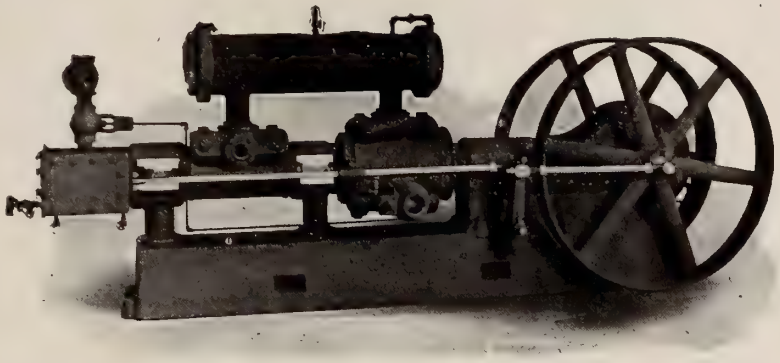
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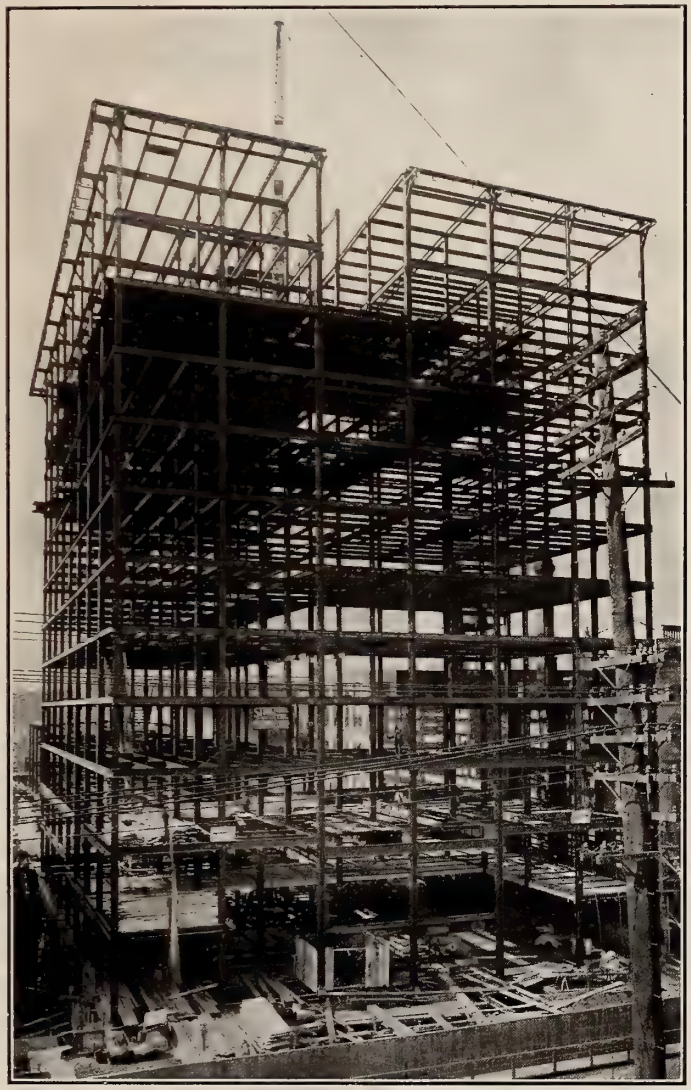
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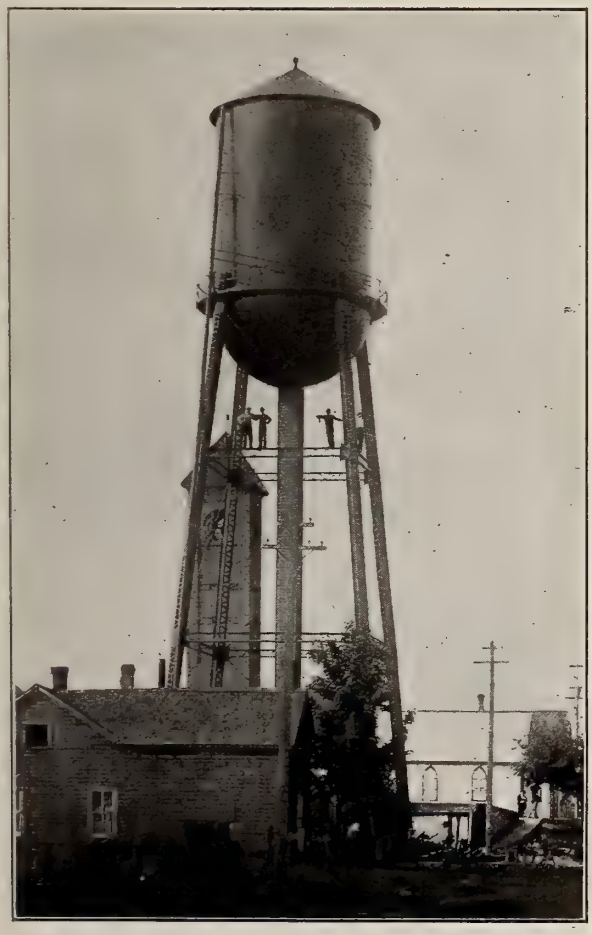
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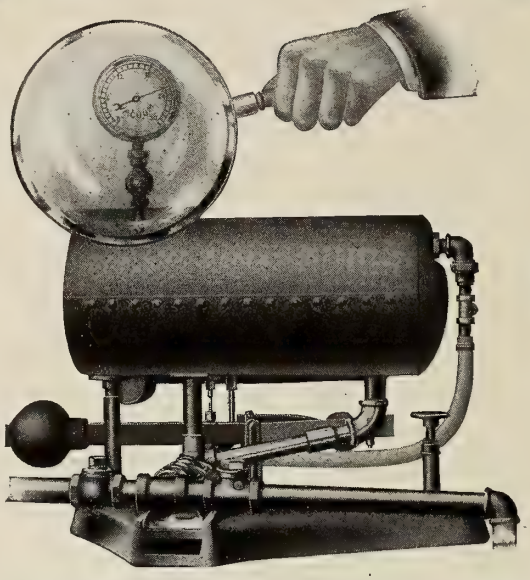
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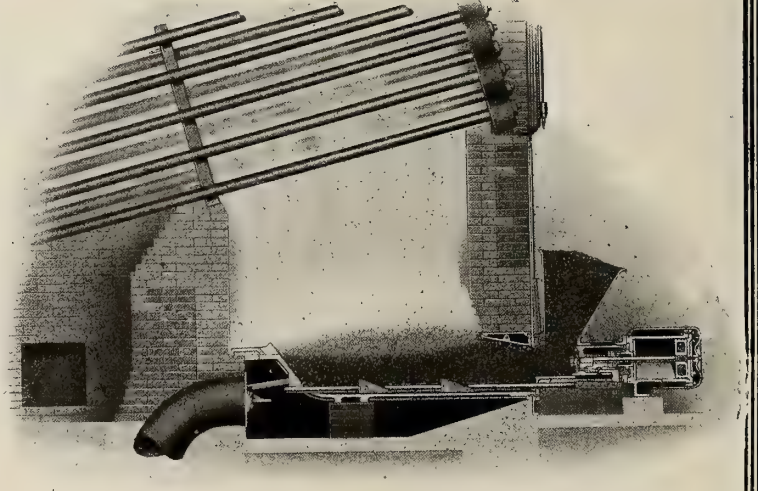
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Morehead Condenser

Canadian Morehead Manufacturing Co.
Dept. "K"
Woodstock, Ont. 373

If You Reduce Your Fuel Cost, You Reduce the Cost of Your Products

Your factory chimney tells the story of the wasteful use of fuel. Efficiency demands that this waste be eliminated. From 15 to 25 per cent. of your fuel bill will be saved by installing a



Jones Underfeed Stoker

MADE-IN-CANADA

Jones Stokers are in use in large plants throughout Canada. They are giving universal satisfaction. Their construction is simple, and their operation sure.

Let us send you a descriptive booklet.

JONES UNDERFEED STOKER COMPANY, Ltd.

NATIONAL TRUST BUILDING, TORONTO

BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

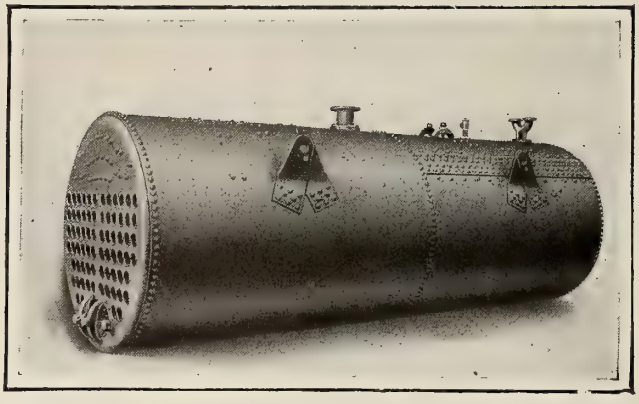
ENGINEERS AND BOILERMAKERS

14 Strachan Avenue Toronto, Canada

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers

E. Leonard & Sons, Limited

LONDON - ONTARIO



Manufacturers of

BOILERS
ENGINES

of all types and sizes.

BRANCHES AT

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Box 1315, Calgary, Alta.
62 Water Street, St. John, N.B.
567 Banning Street, Winnipeg, Man.
Vancouver Machinery Depot, Vancouver, B.C.

Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

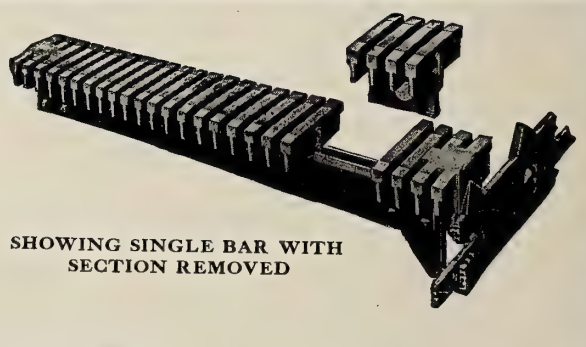
Galt Foundry Co.,
Galt, Ont.

Gentlemen:—

Some months ago we ordered one set of McNaughton Rocking Grates for our No. 1 Boiler. We have been using this continually ever since, and they gave us such good satisfaction, that we followed up the order with two more sets for our No. 2 and No. 3 boilers. We may also add that these are giving entire satisfaction and showing a clean fire at all times.

Yours truly,
(Signature).....

Name of above company on request.



SHOWING SINGLE BAR WITH SECTION REMOVED

A GRATE BAR

that gives universal satisfaction. It is in use in more than one hundred of the biggest plants in Canada.

The McNaughton Rocking Sectional Grate Bar

has high efficiency, long life and low repair costs.

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GALT FOUNDRY CO. - - Galt, Ontario

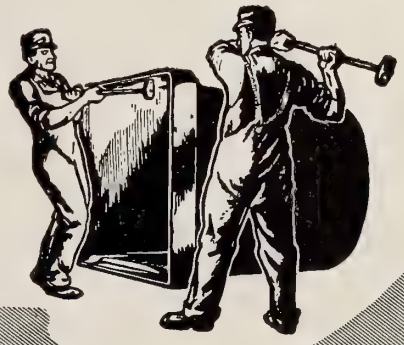
WATEROUS TANKS

WE build Steel Tanks in any size for every use. A separate department of our enlarged Boiler Shop is devoted entirely to this work. Special care is taken to see that every job that goes through is turned out right.

Send us sketches and let us quote you on :

Pressure Tanks	***Steel Reservoirs***	***Storage Bins***	***Gas Tanks***
Washing Tanks	***Steel Retorts***	***Air Tanks***	***Settling Tanks***

Remember, we build Steel Plate Work of all kinds—turned out right, at a reasonable price. Our workmanship is guaranteed.

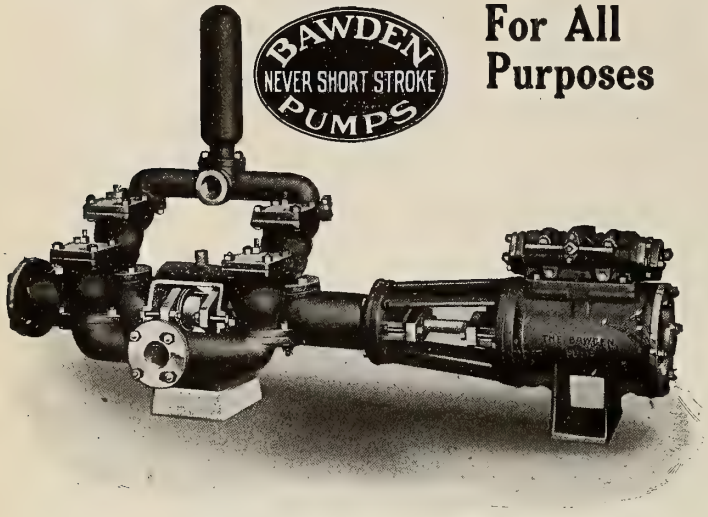


The Waterous Engine Works Company, Ltd.

BRANTFORD - CANADA



BAWDEN PUMPS



For All Purposes

The pumps backed by a grand reputation and the finest installation in Canada.

Bawden Basket Strainers and Pipe Flanges

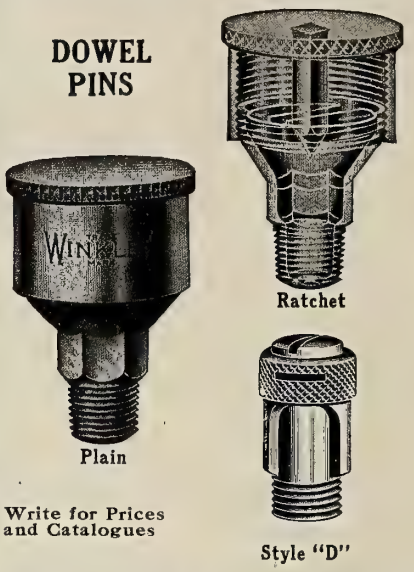
THE BAWDEN MACHINE CO., Ltd.

133 Sterling Road, Toronto, Canada

PRESSED STEEL AND BRASS GREASE CUPS OIL HOLE COVERS, OIL CUPS

DOWEL PINS

SMALL STAMPINGS

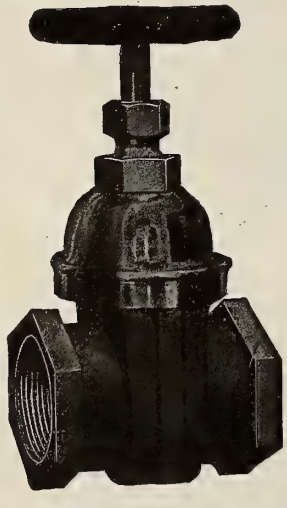


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Samples Sent on Application

THE CANADIAN WINKLEY CO. LIMITED

WINDSOR, ONTARIO



HERE IS A

Brass Gate Valve

You will find it always made from High Grade Steam Metal and beautifully finished.

They are not made of one quality this year and another next. Always reliable and worth the price you pay.

The Kerr Engine Co., Limited

VALVE SPECIALISTS

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ESTABLISHED 1875

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Issues Policies of Insurance after A CAREFUL INSPECTION OF THE BOILERS Covering LOSS OR DAMAGE TO PROPERTY and LOSS RESULTING FROM LOSS OF LIFE AND PERSONAL INJURIES. :: :: :: ::

Policies Guaranteed by THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY. :: :: ::

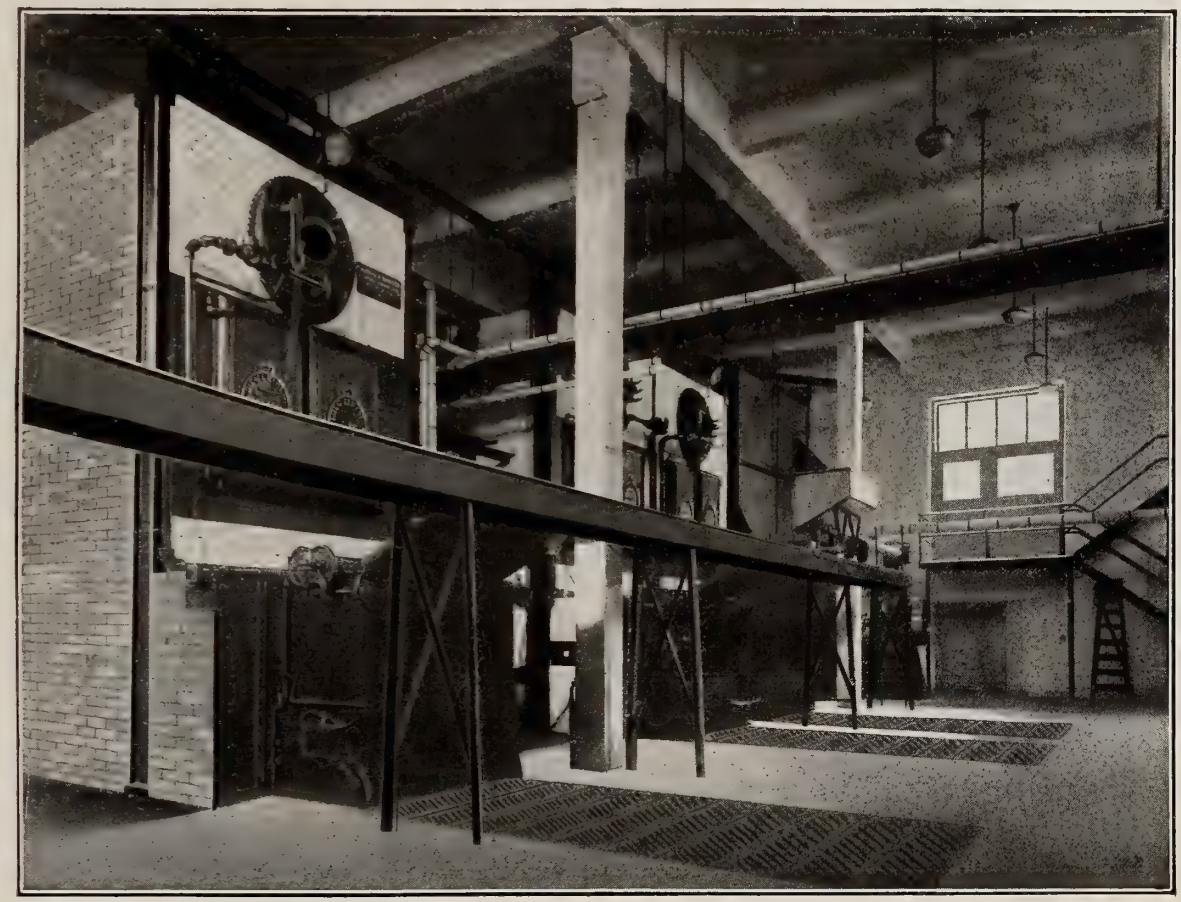
Assets for Security of Policy-holders, $4,552,020.43. :: ::

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H. N. ROBERTS - Vice-President and Sec'y
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Steam Engines and Turbines, Return Tubular and Water Tube Boilers, Heaters, Pumps and Condensers

Built and Designed by Experts with Quality as the First Consideration



Illustrating the Attractive Boiler Room at the B.C. Parliament Buildings, Victoria, B.C., equipped with 3 G. & McC. Water Tube Boilers

The construction of G. & McC. Co. Boilers meets the increasing demand for the highest quality and efficiency

Every Part Subjected to Steam Pressure is MADE OF FORGED STEEL

They Excel in Positive and Rapid Circulation and in Increased Steaming Capacity

Catalogs, Plans and Specifications will be sent upon request

THE GOLDIE & McCULLOUGH CO., LIMITED

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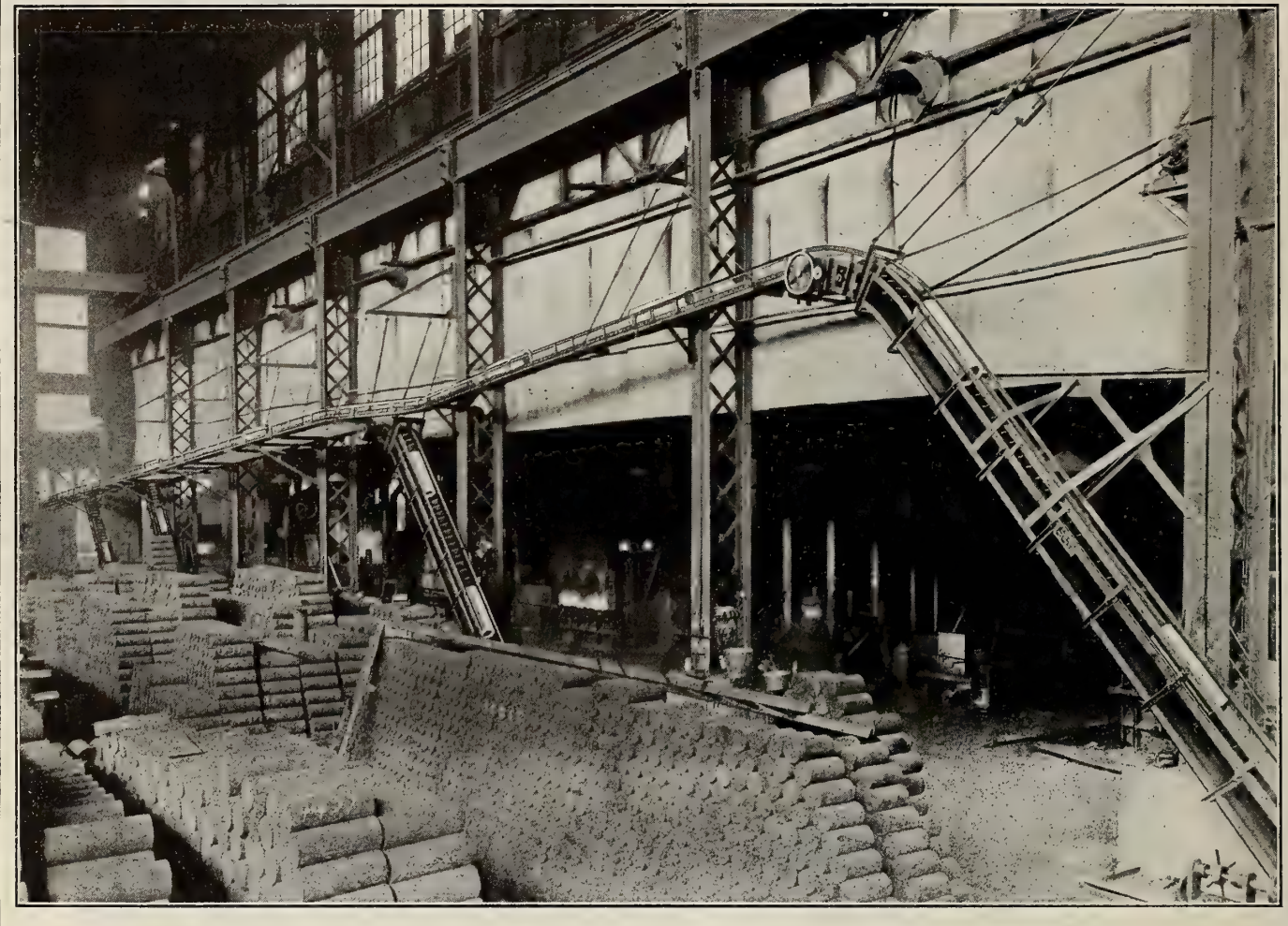
TORONTO OFFICE: Suite 1101-2 Traders Bank Bldg.

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Shell Conveyor Device in Plant of P. Lyall & Sons Construction Co., Montreal

¶ The scarcity of labor deals directly with the manufacturer.

¶ The manufacture of any product fails to become attractive when the labor cost increases the production cost to an extent that you have nothing left for your capital invested.

¶ This not only applies to the manufacture of shells, but it applies to the man who has a Billet or Forging contract.

¶ It also applies to the handling of boxes in process of manufacture and after finishing. It applies to any manufacturer of whatever line, as we design special carriers for any product, such as barrels, drums, lumber, brick, pig iron, bars of iron and tubing.

¶ We shall be pleased to make an estimate of cost and submit plans and specifications without obligating you in any way, if you will write us of your proposition.

Write for our catalogue

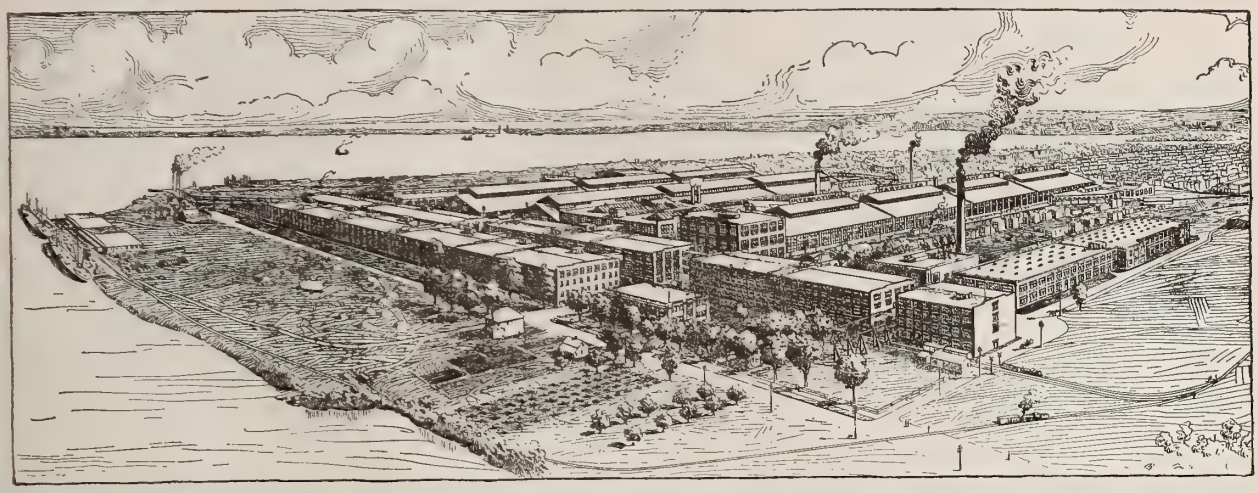
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484 Richmond St. W., Toronto

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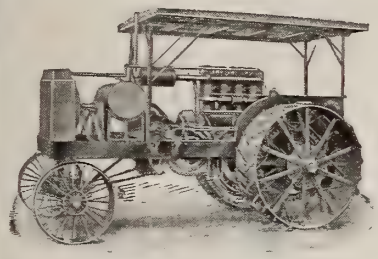
DEERING & McCORMICK

Binders, Mowers, Rakes, Grain Drills, Disk Harrows, Smoothing Harrows, Lever Harrows, Spring Tooth Harrows, Cultivators, Combined Cultivators and Seeders, and Broadcast Seeders are built by the International Harvester Company of Canada, Limited, at Hamilton Works, Hamilton, Ont.



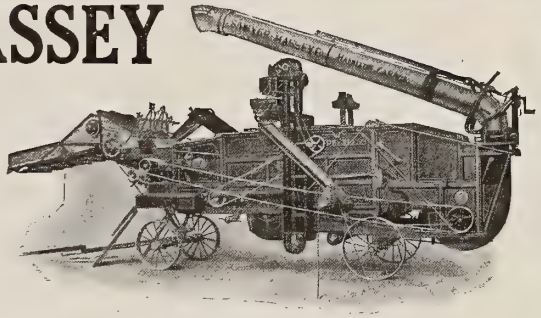
International Harvester Company of Canada, Ltd.

BRANCH WAREHOUSES AT: Brandon, Calgary, Edmonton, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Weyburn, Winnipeg, Yorkton



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Gas Tractor



Awarded

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AT THE

International Motor Contest held at Winnipeg in July, 1913, scoring a notable triumph for Canadian Manufacturers. Medals were also won by Sawyer-Massey Steam Tractors.



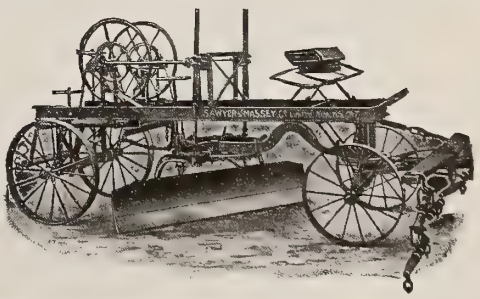
SAWYER-MASSEY CO., Limited

Builders of

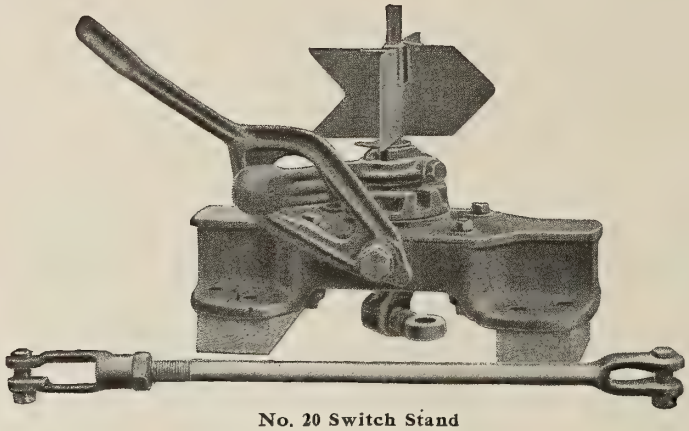
STEAM and GAS TRACTORS THRESHERS and ROAD-MAKING MACHINERY

Hamilton, Canada

Branch Offices and Warehouses at Winnipeg, Manitoba; Regina, Saskatchewan; Calgary, Alberta; Buenos Aires, Argentina.



RAMAPO Automatic Safety Switch Stands

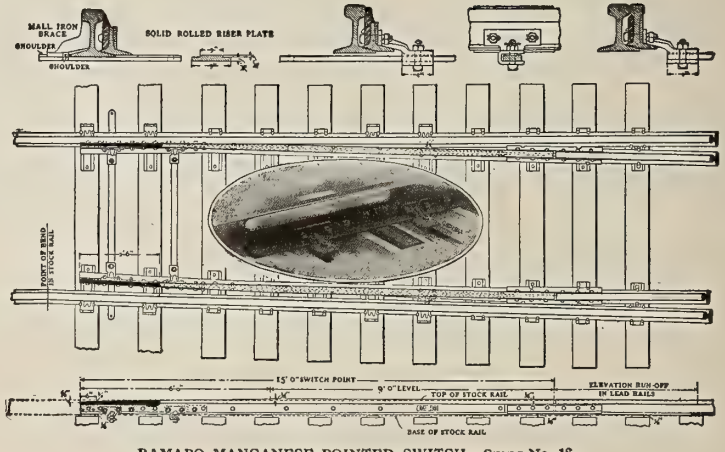


No. 20 Switch Stand

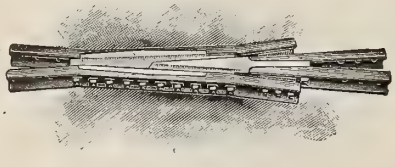
Railroads should use Ramapo Manganese Pointed Switch Style No. 12

RAMAPO
Manganese Frog, Style No. 1

This Reinforced Manganese Frog will in Hard Service outwear all rail frog Four to Six Times.



RAMAPO MANGANESE POINTED SWITCH.- Style No. 12

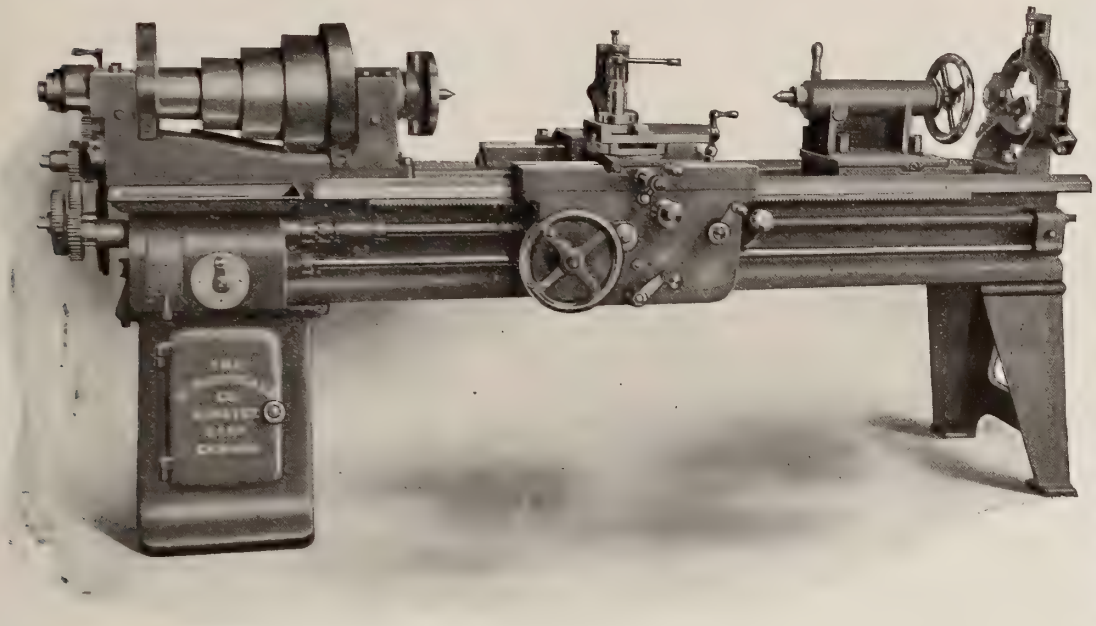


This is the RAMAPO MANGANESE POINTED SWITCH which will outwear SIX to TEN ordinary all rail switch points. Try it somewhere in the hardest place you know of.

CANADIAN RAMAPO IRON WORKS LIMITED

NIAGARA FALLS, CANADA

Where Lathe Solidity Pays



The first essential for clean work, speedy work, heavy cutting, or correct lathe finishing, is absolute lathe solidity and a properly designed rest.

This is found in the McDougall.

As a tool of perfect alignment it is unsurpassed. It is unsurpassed in its "flexibility" in an economic sense—easy speed changing, easy feed changing, easy changes of length, easy adjustment.

Write us for full descriptive folder. This lathe means easy and quick production.

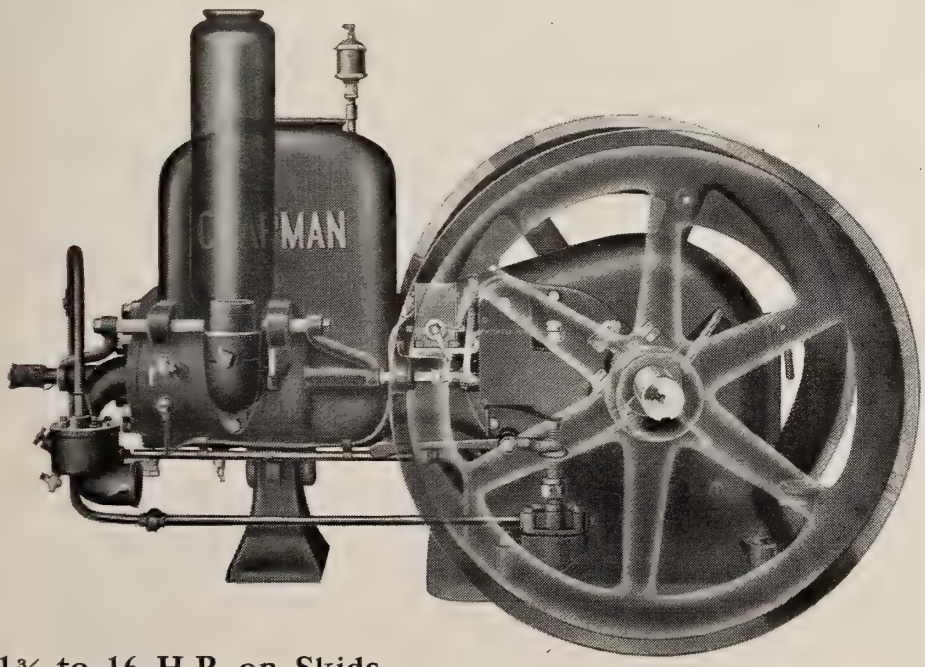
THE R. McDOUGALL CO., Limited, Galt, Canada

Cable Address : DOUGALT Code : A.B.C. 5th.

CANADIAN FAIRBANKS-MORSE CO. LTD., Sales Agents for Canada

Showrooms : Montreal, Toronto, Ottawa, Winnipeg, Saskatoon, Calgary, Vancouver, St. John, N.B.

An Engine for Service



Working parts enclosed and protected but easily get-at-able.

The detachable cam-box does it.

Let us tell you more about it.

1¾ to 16 H.P. on Skids or Mounted on Trucks.

Chapman Engine & Mfg. Co., Ltd. DUNDAS ONTARIO

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KAHN SYSTEM

REINFORCED CONCRETE FIREPROOF, MAXIMUM DAYLIGHT



McCormick Manufacturing Co., London, Ont.

Canadian Frost & Winchester, Contractors — Watt and Blackwell, Architects

Entire construction Kahn System Reinforced Concrete
All windows Kahn Steel Sash

Kahn Products Embrace:

KAHN BARS RIB BARS RIB METAL HYRIB KAHN LATH

Kahn Steel Sash Ideal for Factories, Warehouses, Powerhouses, Etc., being Fireproof, Waterproof and Durable

Write for Descriptive Catalogues

KAHN SYSTEM Reinforced Concrete

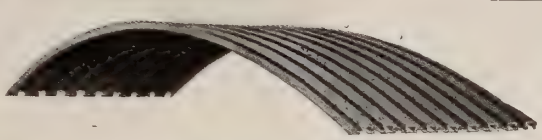
Trussed Concrete Steel Co. Canada, Limited

HEAD OFFICE AND WORKS: WALKERVILLE, ONT.

BRANCHES:

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KAHN SYSTEM Reinforced Concrete



Pedlar's Ferro-Dovetail Plates

make permanent, time-resisting construction so simple, no centering or special forms are required in any form of concrete construction.

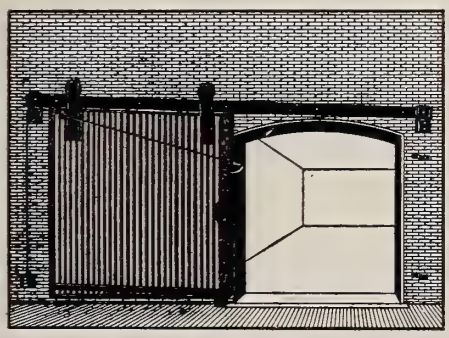
The lateral dovetail, cross-ribbed corrugations inbed themselves immovably in the plaster and cement, making a fireproof, acid-proof, time-proof roof, ceiling or floor. Supplied in any gauge, in straight, or curved to any desired degree for special arches. Write for free literature.

Pedlar's Saino SHEET METAL FIRE DOOR

Cannot prevent the visit of fire to your buildings. That may happen anywhere. But if it does come, Pedlar's Saino Fire Door gives you the assurance that it will be definitely held to the area in which it originated until help arrives to extinguish it.

Entirely different from others in construction and resistance to prolonged intense heat. For how else could underwriters so willingly allow you lower rates when Pedlar's Saino Fire Door is used?

Write now for Tests, Illustrations, Testimonials and list of prominent users.



Pedlar's Roofing Materials

Whatever the nature of the roof you have to build or reconstruct, there is a Pedlar Roofing material best suited to your requirement. Whether it is a Pedlar Concrete reinforcing material, Pedlar's Corrugated, Galvanized Iron, or Pedlar's "George" or "Oshawa" Steel Shingles, find out to-day where lasting economy and durability come in, in the construction of a roof.

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THE AGE of STEEL

STONE has long been considered the most durable of building materials. But to-day, when the modern builder thinks of safety and permanence in a building, he thinks of steel.

The only material comparable with stone in strength and resistance is steel. In convenience, economy and versatility of use steel is paramount.

In Pedlar's "Perfect" Sheet Metal Products you find steel developed to the maximum of usefulness.. Whatever your requirements, for outward protection or internal reinforcement, when Pedlar's "Perfect" Products enter into the construction of your new building or addition it means the end of insecurity, wasteful repairs and early decay.

Pedlar's "Perfect" Products comprise fireproofing, reinforcing and roofing materials, fire doors, corner beads, wall ties, wall studs, and everything in sheet metal.

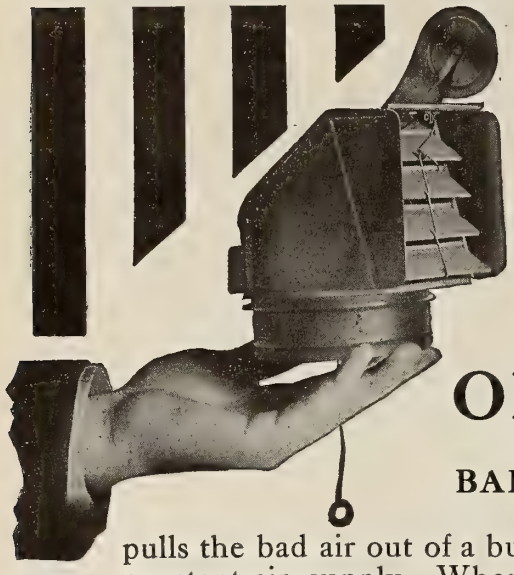
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(Established 1861)

Executive Offices and Factories : OSHAWA, ONT.

Branches : Montreal, Ottawa, Toronto, London, Winnipeg



It preaches Fresh Air

When our salesman calls on a prospective purchaser of Ormsby Swartwout Ventilators, he takes this little model with him. Better than a thousand words could do it, this miniature ventilator explains the principle of semi-mechanical ventilation.

Working on that principle, the

ORMSBY SWARTWOUT ROTARY BALL-BEARING VENTILATOR

pulls the bad air out of a building by the force of a partial vacuum. It affords constant air supply. When fitted with the self-cleaning pitched glass-top, it serves also as a serviceable skylight.

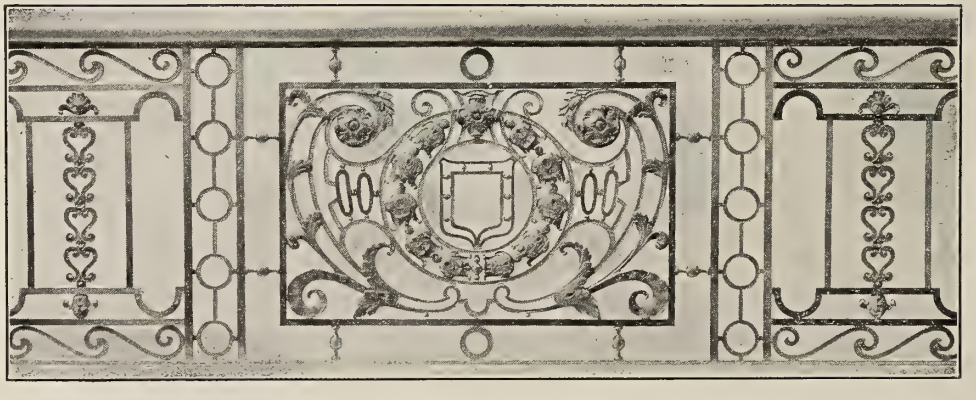
All sorts of work-rooms in factories, mills and foundries are successfully ventilated by Ormsby Swartwout. Send the coupon for "The Gospel of Fresh Air" — real stories of ventilation experience. It tells why ventilation pays.

Please send the "Gospel of Fresh Air."
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GALVANIZED STEEL SHEETS

Made to-day are Produced in Hamilton?

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Every sheet is perfectly coated, flat, soft, workable. Quick shipments mean less stock for you to carry. Prices right. Send us your inquiries. Large stocks of Black Sheets, all gauges and sizes, at right prices.

Dominion Sheet Metal Co., Limited

HAMILTON CANADA

Modern Methods Demand DENNISTEEL Lockers!

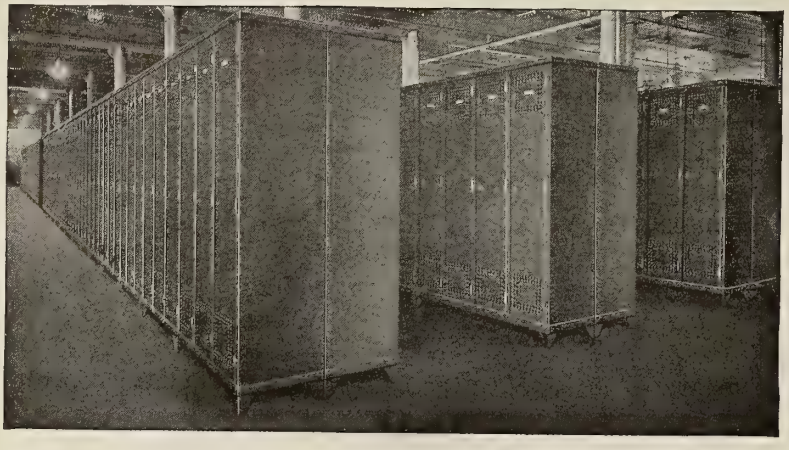
LONDON - CANADA



THE USE of metal instead of wooden lockers, cabinets and shelving, came in with the advent of the adding machine, the dictaphone and other modern equipment for offices and factories.

Canada's largest firms have dispensed with old-style, fire-dangerous wooden lockers and shelving, and installed a complete, imperishable system of DENNISTEEL.

Here are some of the reasons why: **Absolute Sanitation, Less Fire Risk, Theft Proof, Economy of Space, Employees' Comfort, Permanency, Orderliness, Fine Finish, Durability, Superiority.**



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And Y. M. C. A.'s all over Canada

May we send some interesting facts on the subject?

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A HIGH-GRADE Piano, plus an EXCLUSIVE Player-Piano

form a most desirable line for live Dealers.

Doherty Pianos have more practical, talking and selling points than *any* others.

We have a proposition, write for it.

DOHERTY PIANO CO., Limited
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Section of Refinery and Producing Properties at Petrolia, Ontario, covering approximately 350 acres.

MAKE THE BRITISH EMPIRE GROW BY PURCHASING OILS MADE IN CANADA

Manufacturers of High-Grade Refined Oils, Gasoline, Benzine, Lubricating Oils, Greases, Boiler Compound, Paraffine Wax, Tanners' Oils and all products of Petroleum. Write us for prices before closing your contract.

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SCREEN PLATES



THE "Union" Bronze (best phosphorized cast metal) Plates for Sulphite Mills, The Standard Rolled Brass Plates. The "Union" Cast Metal Suction Plates.

We carry a large stock of blanks of the various sizes in both metals and can fill all orders promptly.

Old plates reclosed and recut by our process are practically as good as new and give better results than by any other process.

UNION SCREEN PLATE CO. of Canada, Limited

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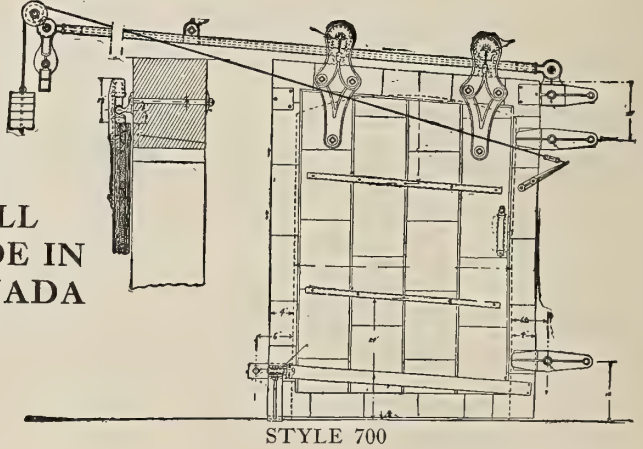
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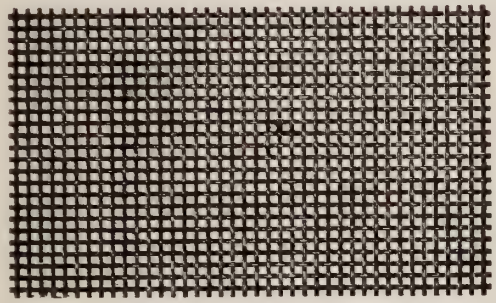
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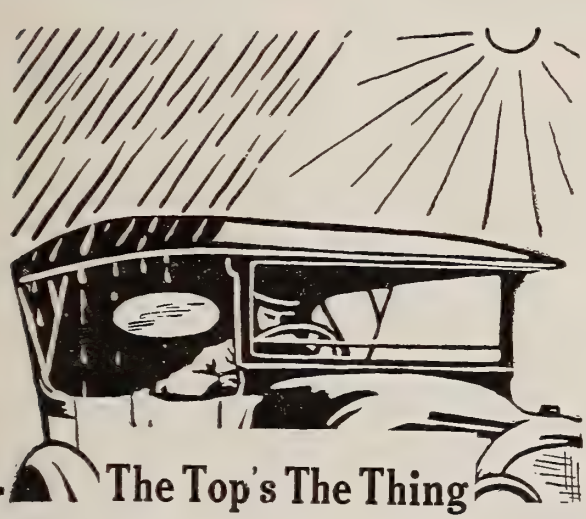
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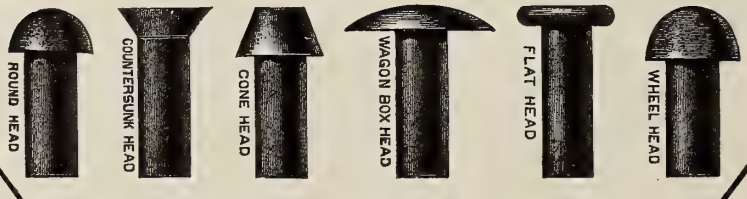
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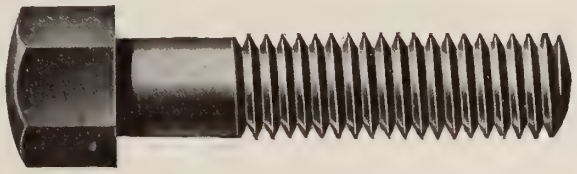
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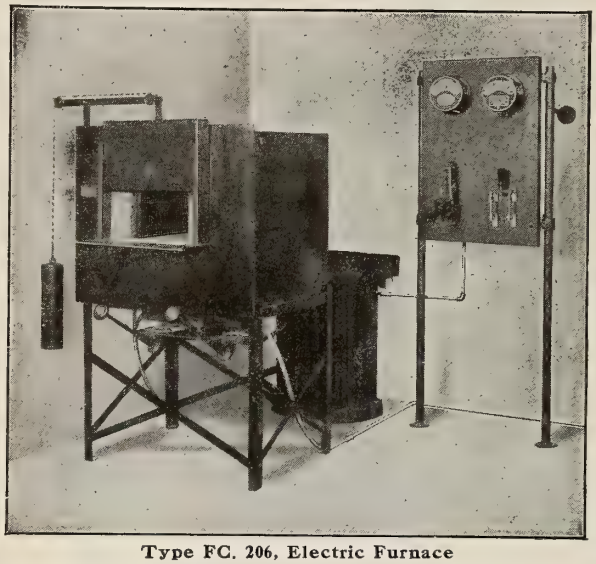
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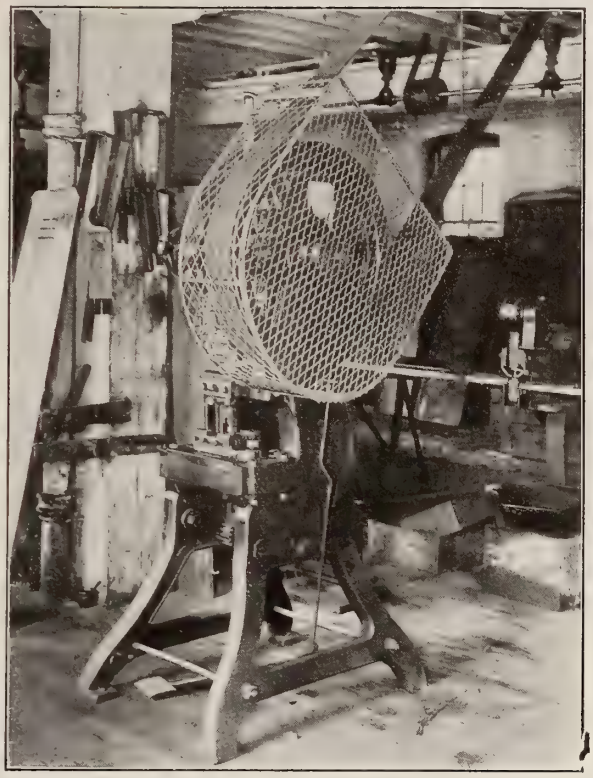
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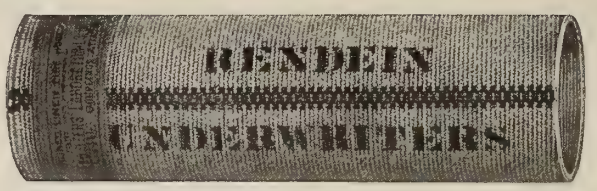
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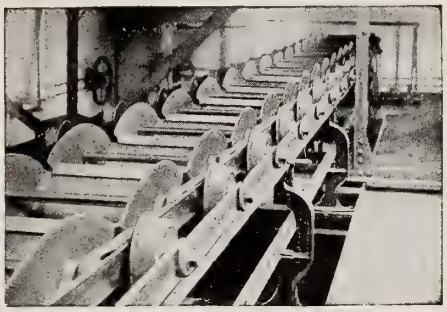
Flight Conveyor for Coal

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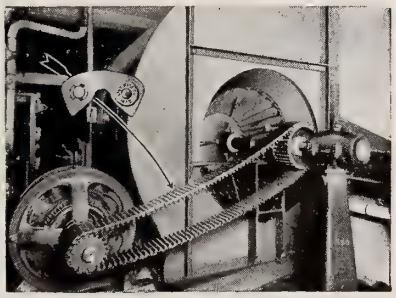
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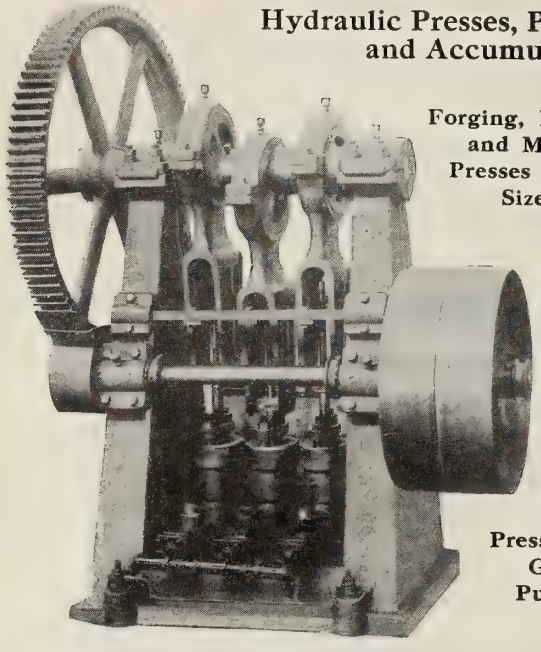
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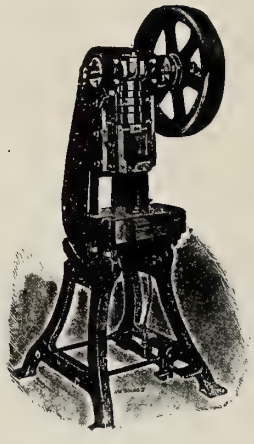
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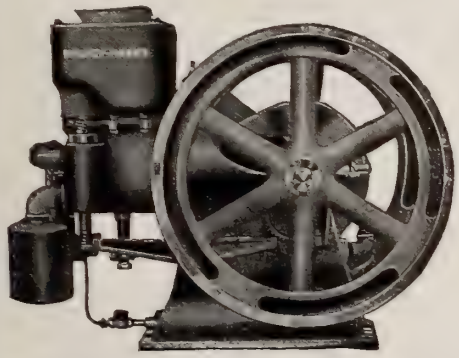
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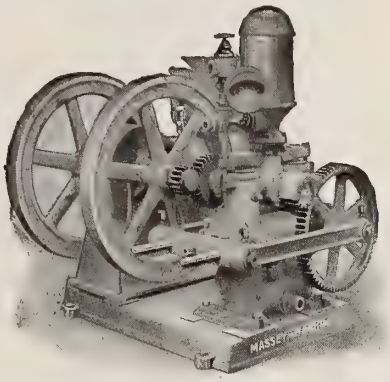
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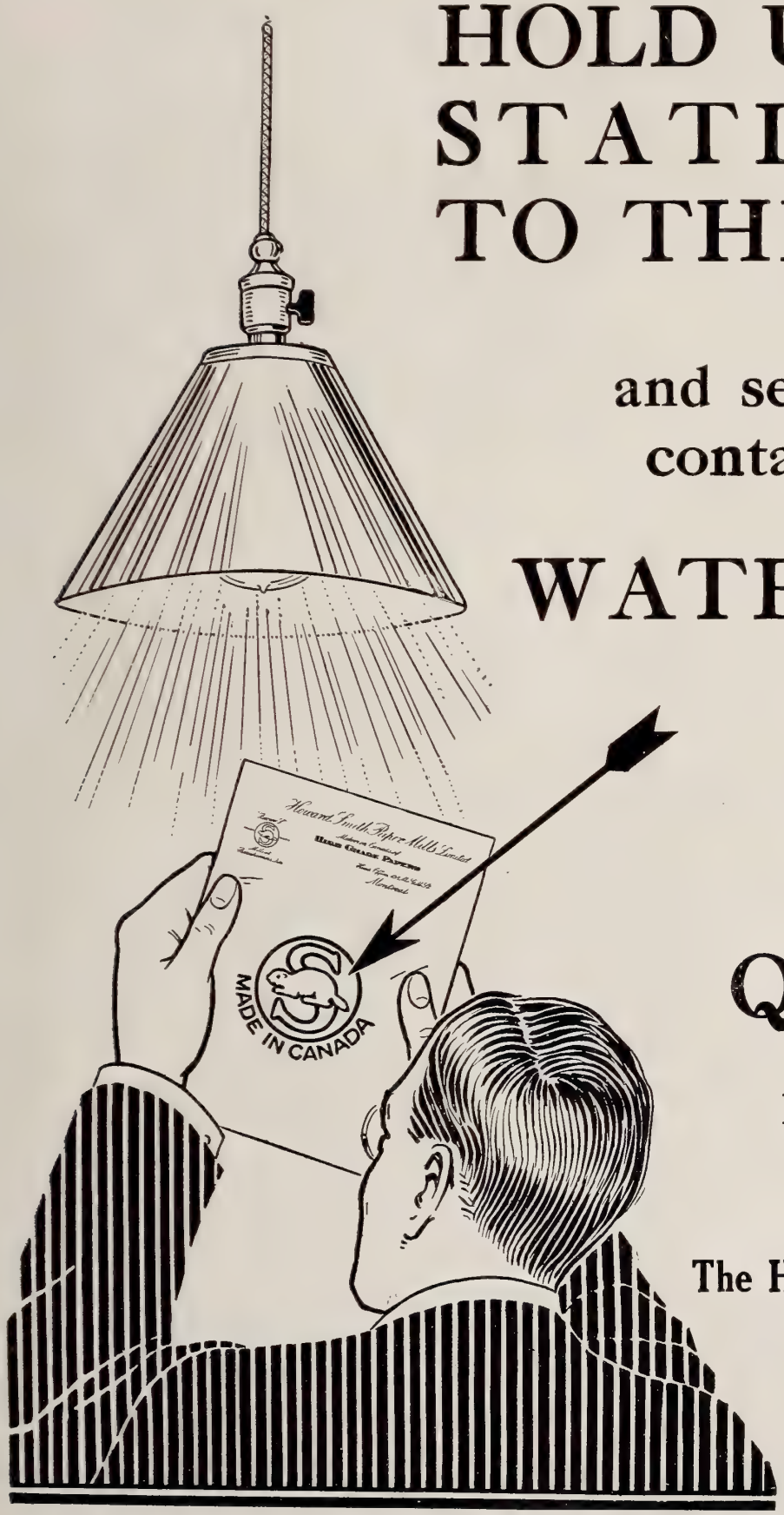
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BROOM Handles
PAIL Handles
From first quality Canadian Hardwoods
PICK Handles
AXE Handles
SLEDGE Handles
HAMMER Handles
From Imported Southern Hickory
FORK Handles
RAKE Handles
SHOVEL Handles
HOE Handles
From Imported Northern White Ash

Handles of all Kinds

We make the Highest Grade Handle on the Market. Nothing can beat it. Our Polished Broom and Pail Handles are perfection itself. The same is true of our Hickory and Ash Tool Handles.

Goods the best—Prices right.

DON'T FORGET US

Dominion Hardwoods Limited, Deseronto, Ont.

Cable Address Hay, Woodstock, Ont.

Manufacturers
THREE AND FIVE PLY
Veneered
PANELS

FOR ALL PURPOSES
In Plain and Figured Woods

Sewing Machine Woodwork and Other Specialties

Hay & Company
LIMITED
Woodstock - - Ontario

FISHER BODY CO.
of Canada, Ltd.

Manufacturers of
AUTOMOBILE
BODIES
in quantity only.

FORD, ONTARIO

FOR SALE

"On the Upper Ottawa, short distance above Lake Temiscaming, about 400 square miles timber licenses (Quebec), chiefly Spruce, together with large water power convenient to timber and near Government railway connecting three Canadian transcontinental lines. Principals only. Address Box 455, Ottawa."

THE
Strong-Scott Mfg. Co.
LIMITED

Flour Mill and Elevator
Machinery

ELEVATING, CONVEYING
AND POWER TRANSMISSION
EQUIPMENT

FOUNDERS &
MACHINISTS

Roll Grinding and Corrugating a Specialty

WINNIPEG, MAN.

"PLASTIC" BRICK

are not made by chance. Shale Rock material with good equipment, careful workmanship and rigid inspection---combine to make our brick the best on the market. Each of the several varieties leads its particular field.

The most modern plant in Canada produces these brick, which lead in color, strength, uniformity and durability.

Made ONLY by

NATIONAL BRICK COMPANY

OF LAPRAIRIE, LIMITED

Office and Salesroom, 10 Victoria Square - - Montreal, Que.

OUR MOTTO: "QUALITY"

Electric Lighting Fixtures,
Mantels, Grates, Tiles,
Brass and Iron Fireplace
Furnishings,
Tile Floors and Walls,

Are our Specialties

The Barton Netting Co.

Limited

9-11 Pitt Street East
WINDSOR . . ONT.

Standard Clay Products Limited

MANUFACTURERS OF

Salt Glazed, Vitrified Sewer and Culvert Pipes

4 inch to 30 inch

Square and Round Flue Linings, Inverts, Building Blocks

Fire Clay, Stove and Range Bricks, Locomotive Arch Blocks

And All Shapes in Fire Clay

FACTORIES AT

ST. JOHNS, P.Q., and NEW GLASGOW, N.S.

CANADIAN CARBONATE CO.
LIMITED

MANUFACTURERS OF

Crown Brand Carbonic Acid Gas

OFFICES AND FACTORIES:

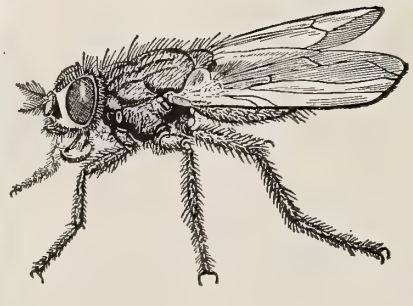
Montreal, Toronto, Winnipeg and Calgary

Are You Thirsty? DRINK **"GURD'S"** DRINKS

"They Satisfy"

"GURD'S" DRY GINGER ALE is select in every particular—pleasingly pungent—of delicately balanced flavor. A favorite at select functions.
To drink "GURD'S" drinks is a Canadian "national habit."

CHARLES GURD & CO., Limited **MONTREAL**
Beverage Manufacturers, Mineral Spring Owners, and Wholesalers

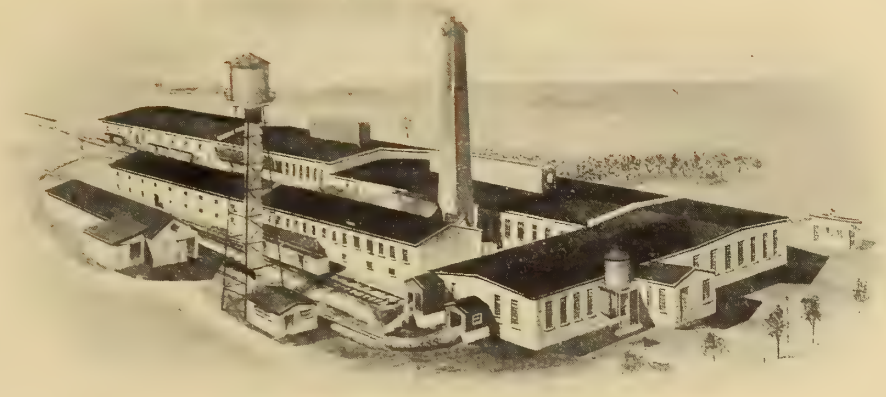


TANGLEFOOT

The Sanitary Fly Destroyer—Non-Poisonous

Gets 50,000,000,000 Flies a year—vastly more than all other means combined

Poisons are Dangerous!



St. Lawrence Division, Mille Roches, Ontario

WIDTH OF MACHINES, 120 AND 136 INCHES

Making 70,000 lbs. daily S. C. and M. F. Book Papers. Supplying the Montreal and Eastern Market



Montrose Division, Thorold, Ont.

WIDTH OF MACHINES, 90 AND 140 INCHES

Making 60,000 lbs. daily, Bonds, Writing and Book. Supplying the Toronto and Western Market

PROVINCIAL PAPER MILLS CO., LIMITED

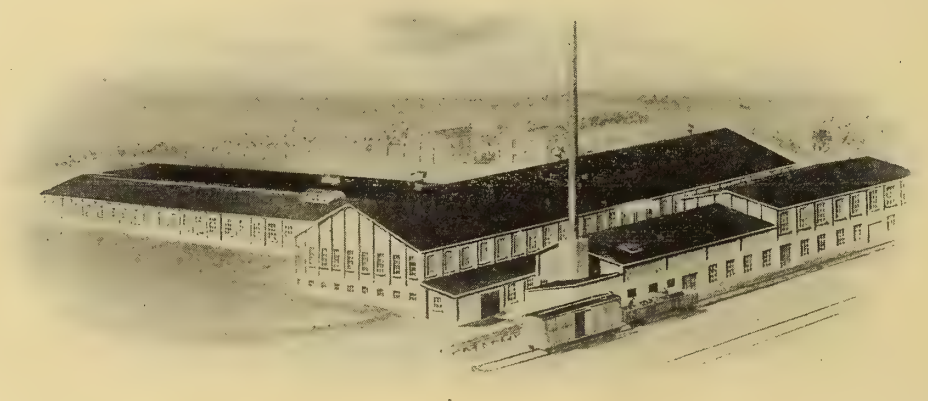
TORONTO, CANADA



Paper Mill, Barber Division, Georgetown, Ont.

WIDTH OF MACHINES, 60 AND 84 INCHES

Making 30,000 lbs. daily, Specialties, Featherweight, Antique Book and Cover Papers



Coating Mill, Barber Division, Georgetown, Ont.

Coating 28,000 lbs. daily, Book and Boards. The Famous Maple Leaf and Beaver Brands

PROVINCIAL PAPER MILLS CO., LIMITED

TORONTO, CANADA

BANK OF MONTREAL

ESTABLISHED 1817

Capital Paid Up.....$16,000,000 Reserve Fund $16,000,000
Undivided Profits..... $1,321,193 Total Assets..... $390,421,701

BOARD OF DIRECTORS:

H. V. Meredith, Esq., President

R. B. Angus, Esq. E. B. Greenshields, Esq. Sir William Macdonald
Hon. Robt. Mackay Lord Shaughnessy, K.C.V.O. C. R. Hosmer, Esq.
A. Baumgarten, Esq. C. B. Gordon, Esq. H. R. Drummond, Esq.
D. Forbes Angus, Esq. William McMaster, Esq.

Head Office: MONTREAL

General Manager—Sir Frederick Williams-Taylor, LL.D.
Assistant General Manager—A. D. Braithwaite

BRANCHES OF THE BANK LOCATED IN ALL IMPORTANT CITIES AND TOWNS IN THE DOMINION

PRINCIPAL BRANCHES OUTSIDE OF CANADA

LONDON, Eng.:
47 Threadneedle Street, E.C.

G. C. CASSELS, Manager

Sub Agency—
9 Waterloo Place, Pall Mall, S.W.



NEW YORK:
64 Wall Street

R. Y. HEBDEN
W. A. BOG,
J. T. MOLINEUX,
Agents.

CHICAGO:
108 South La Salle Street.

Spokane, Washington

NEWFOUNDLAND:
St. John's, Curling and Grand Falls

Savings Department connected with each Canadian Branch and interest allowed at current rates.

Collections at all points throughout the world undertaken at favourable rates.

Travellers' Cheques, Limited Cheques and Travellers' Letters of Credit issued, negotiable in all parts of the world.

This Bank, with its Branches at every important point in Canada, offers exceptional facilities for the transaction of a general banking business.

UNION BANK
OF CANADA

Established 1865

HEAD OFFICE, WINNIPEG

Paid-up Capital $5,000,000
Reserve Fund 3,400,000
Total Assets, over 90,000,000

BOARD OF DIRECTORS

Hon. President—SIR WILLIAM PRICE

President—JOHN GALT, Esq.

Vice-Presidents

R. T. RILEY, Esq.

G. H. THOMSON, Esq.

Directors

W. R. ALLAN, Esq.
HUME BLAKE, Esq.
M. BULL, Esq.
Major-Gen. JOHN W. CARSON, C.B.
B. B. CRONYN, Esq.
E. L. DREWRY, Esq.
S. HAAS, Esq.
J. S. HOUGH, Esq., K.C.
F. E. KENASTON, Esq.
R. O. McCULLOCH, Esq.
WM. SHAW, Esq.



Head Office, Winnipeg

G. H. BALFOUR, General Manager
H. B. SHAW, Assistant General Manager
F. W. S. CRISPO, Supt. of Branches and Chief Inspector

Attention is particularly drawn to the advantages offered by the Foreign Exchange Department of our London (England) Office, and Merchants and Manufacturers are invited to avail themselves of the Commercial Information Bureau established at that Branch.

To Merchants, Manufacturers and Business Men Generally

The Union Bank of Canada offers every form of service which a progressive bank can render—a service much more complete and valuable because of the network of over 315 Branches in Canada, extending from Halifax to Prince Rupert, over 200 of which are in Western Canada.

Correspondents in all cities of importance throughout Canada, the United States, the Continent of Europe, and the British Colonies. Collections made in all parts of the Dominion, and returns promptly remitted at lowest rates of exchange.

CORRESPONDENCE SOLICITED

THE MERCHANTS BANK OF CANADA

Statement of Liabilities and Assets at 29th April, 1916.

LIABILITIES

1. To the Shareholders.

Capital Stock paid in	$7,000,000 00
Rest or Reserve Fund	7,000,000 00
Dividends declared and unpaid	175,542 50
Balance of Profits as per Profit and Loss Account submitted herewith	250,984 12
	$14,426,526 62

2. To the Public.

Notes of the Bank in Circulation	$7,486,906 00
Deposits not bearing interest	17,181,959 18
Deposits bearing interest (including interest accrued to date of statement)	54,995,069 97
Balances due to other Banks in Canada	363,799 39
Balances due to Banks and banking correspondents in the United Kingdom and foreign countries	877,399 91
Bills payable	.....
Acceptances under letters of credit	1,029,702 00
Liabilities not included in the foregoing	.....
	$96,361,363 07

ASSETS

Current Coin held	$3,681,854 13
Deposit in the Central Gold Reserves	1,000,000 00
Dominion Notes held	8,106,240 25
Notes of other Banks	702,006 00
Cheques on other Banks	2,754,968 88
Balances due by other Banks in Canada	2,836 92
Balances due by Banks and banking correspondents in the United Kingdom	207,226 65
Balances due by Banks and banking correspondents elsewhere than in Canada and the United Kingdom. (In U. S., $3,839,597.24)	3,892,026 83
Dominion and Provincial Government securities, not exceeding market value	2,480,446 72
Canadian Municipal securities, and British, Foreign and Colonial public securities, other than Canadian	5,251,321 38
Railway and other Bonds, Debentures and stocks, not exceeding market value	5,055,106 27
Call Loans in Canada on Bonds, Debentures and Stocks	5,175,048 49
Call Loans elsewhere than in Canada	2,651,404 32
	$40,960,486 84
Other Current Loans and Discounts in Canada (less Rebate of Interest)	48,835,565 38
Other Current Loans and Discounts elsewhere than in Canada (less Rebate of Interest)	203,125 72
Liabilities of Customers under letters of credit as per contra	1,029,702 00
Real Estate other than bank premises	177,186 29
Overdue debts, (estimated loss provided for)	164,363 18
Bank premises, at not more than cost, less amounts written off	4,507,782 34
Deposit with the Minister for the purposes of the Circulation Fund	345,000 00
Other Assets not included in the foregoing	138,151 32
	$96,361,363 07

K. W. BLACKWELL, *Vice-President.*

E. F. HEBDEN, *General Manager.*

Report of the Auditors to the Shareholders of The Merchants Bank of Canada

In accordance with the provisions of sub-Sections 19 and 20 of Section 56 of the Bank Act we report to the shareholders as follows:—

We have examined the above Balance Sheet with the Books of Account and other records of the Bank at the Chief Office and with the signed returns from the Branches and Agencies.

We have checked the cash and verified the securities of the Bank at the Chief Office against the entries in regard thereto in the Books of the Bank as on April 29th, 1916, and at a different time during the year and found them to agree with such entries. We have also attended at some of the Branches during the year and checked the cash and verified the securities held at the dates of our attendance and found them to agree with the entries in the books of the Bank with regard thereto.

We have obtained all the information and explanations we have required. In our opinion the transactions of the Bank which have come under our notice have been within the powers of the Bank, and the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs according to the best of our information and the explanations given to us and as shown by the books of the Bank.

VIVIAN HARCOURT, of Deloitte, Plender, Griffiths & Co.
J. REID HYDE, of Macintosh & Hyde.
} Auditors.

Montreal, 23rd May, 1916.

THE ROYAL BANK OF CANADA

Capital Authorized, $25,000,000 — **Reserve Funds - $ 13,236,000**
Capital Paid Up - 11,794,000 — **Total Assets - 224,000,000**

BOARD OF DIRECTORS

SIR HERBERT S. HOLT—*President*

E. L. PEASE—*Vice-President*

E. F. B. JOHNSTON, K.C.— *2nd Vice-President*
HON. D. MACKEEN — T. J. DRUMMOND
JAMES REDMOND — WM. ROBERTSON
G. R. CROWE — A. J. BROWN, K.C.
D. K. ELLIOTT — W. J. SHEPPARD
HON. W. H. THORNE — C. S. WILCOX
HUGH PATON — A. E. DYMENT
C. E. NEILL

OFFICERS

E. L. PEASE—*Managing Director*
C. E. NEILL—*General Manager*
F. J. SHERMAN—*Assistant General Manager*
W. B. TORRANCE—*Superintendent of Branches*

BRANCHES

370 Branches throughout the Dominion of Canada, in Newfoundland, the West Indies, London, Eng., and New York, U.S.A.

Statement to the Dominion Government (condensed) Showing Condition of the Bank on April 29, 1916

LIABILITIES

Capital Paid Up	$ 11,793,880.00
Reserve Fund	12,560,000.00
Undivided Profits	676,472.16
Notes in Circulation	15,104,976.49
Deposits	178,318,730.82
Due to Other Banks	5,575,253.49
Bills Payable (Acceptances by London Branch)	248,553.06
Acceptances under Letters of Credit	281,267.15
	$224,559,133.17

ASSETS

Cash on Hand and in Banks	$ 55,611,417.54
Deposit in the Central Gold Reserves	3,960,000.00
Government and Municipal Securities	10,877,075.93
Railway and Other Bonds, Debentures and Stocks	14,450,900.35
Call Loans in Canada	9,783,616.37
Call Loans Elsewhere than in Canada	14,024,950.26
Deposit with Dominion Government for Security of Note Circulation	578,000.00
	$109,285,960.45
Loans and Discounts	108,709,425.68
Liabilities of Customers under Letters of Credit as per contra	281,267.15
Bank Premises	5,191,791.61
Real Estate other than Bank Premises	1,090,688.28
	$224,559,133.17

A GENERAL BANKING BUSINESS TRANSACTED

THE DOMINION BANK

HEAD OFFICE, TORONTO

Capital Paid Up - - $6,000,000
Reserve Fund - - - $7,000,000

Sir Edmund B. Osler, M.P., President — W. D. Matthews, Vice-President
C. A. Bogert, General Manager

BANKING BUSINESS OF EVERY DESCRIPTION TRANSACTED

The Accounts of Manufacturers, Traders and Others Carried on Favorable Terms

Commercial Letters of Credit Issued

Available in Foreign Countries

London, England, Branch : 73 Cornhill, E.C.

THE BANK OF BRITISH NORTH AMERICA

Established in 1836. Incorporated by Royal Charter in 1840

Paid-up Capital $4,866,666.66
Reserve Fund $3,017,333.33

Head Office—5 GRACECHURCH STREET, LONDON, E.C.

J. DODDS, Secretary W. S. GOLDBY, Manager

COURT OF DIRECTORS

F. R. S. Balfour E. A. Hoare C. W. Tomkinson
J. H. Brodie E. Geoffrey Hoare G. D. Whatman
J. H. Mayne Campbell Frederic Lubbock

Head Office in Canada . . . . . ST. JAMES STREET, MONTREAL

H. B. MACKENZIE, General Manager

J. ANDERSON	Superintendent of Branches
H. A. HARVEY	Superintendent of Eastern Branches, Montreal
J. McEACHERN	Superintendent of Central Branches, Winnipeg
O. R. ROWLEY	Chief Inspector
A. S. HALL	Inspector of Branch Returns
J. H. GILLARD, and N. V. R. HUUS	Inspectors
B. C. GARDNER	Assistant Inspector

This Bank has branches in all the principal Cities of Canada, including Dawson City (Y.T.), and Agencies at New York and San Francisco in the United States. Agents and Correspondents in every part of the world.

COLLECTIONS MADE AT LOWEST RATES

Drafts, Money Orders, Circular Letters of Credit and Travellers' Cheques issued, Negotiable anywhere

Agents in Canada for Colonial Bank, London and West Indies

SAVINGS DEPARTMENT AT EVERY BRANCH

BANK OF HAMILTON

HEAD OFFICE, HAMILTON

Capital Authorized $5,000,000
Capital Paid Up 3,000,000
Reserve and Undivided Profits . . 3,475,000



BOARD OF DIRECTORS

Sir John S. Hendrie, K.C.M.G., President Cyrus A. Birge, Vice-President
C. C. Dalton Robt. Hobson Geo. Rutherford J. Turnbull W. A. Wood
J. P. Bell, General Manager

BRANCHES THROUGHOUT ONTARIO
THE NORTHWEST AND BRITISH COLUMBIA

Correspondents in Great Britain—National Provincial Bank of England, Limited

CORRESPONDENTS IN UNITED STATES

New York—Hanover National Bank
" " Mechanics and Metals National Bank
Boston—National Shawmut Bank
Buffalo—Marine National Bank
Chicago—Continental and Commercial National Bank
Cleveland—First National Bank
Detroit—First and Old Detroit National Bank
Minneapolis—First and Security National Bank
Kansas City—Southwest National Bank of Commerce
Philadelphia—First National Bank
Pittsburg—Exchange National Bank
St. Louis—National Bank of Commerce
San Francisco—Crocker National Bank
Seattle—Bank of California

Collections effected in all parts of Canada promptly and cheaply. Correspondence solicited

SAVINGS DEPARTMENT AT ALL BRANCHES

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President

JOHN AIRD
General Manager

H. V. F. JONES
Ass't General Manager

CAPITAL PAID-UP, $15,000,000
RESERVE FUND, $13,500,000

Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

S 57

THE ROYAL BANK OF CANADA

Incorporated 1869

Capital Authorized - - - $25,000,000
Capital Paid Up - - - - $11,790,000
Reserve & Undivided Profits $13,236,000
Total Assets - - - - - $224,000,000

HEAD OFFICE, MONTREAL

BOARD OF DIRECTORS

Sir H. S. Holt, President E. L. Pease, Vice-President and Man. Director
E. F. B. Johnston, K.C., 2nd Vice-President

Hon. D. MacKeen, Jas. Redmond, G. R. Crowe, D. K. Elliott, Hon. W. H. Thorne, Hugh Paton, T. J. Drummond, Wm. Robertson, A. J. Brown, K.C, W. J. Sheppard, C. S. Wilcox, A E. Dyment, C. E. Neill

OFFICERS

E. L. Pease, Managing Director
C. E. Neill, General Manager F. J. Sherman, Asst. Gen. Manager
W. B. Torrance, Superintendent of Branches

Branches in every Province of the Dominion of Canada and in Newfoundland; in Havana and throughout Cuba, Porto Rico, Dominican Republic and Costa Rica; Antigua, St. John's; Bahamas, Nassau; Barbados, Bridgetown; Dominica, Roseau; Grenada, St. George's; Jamaica, Kingston; St. Kitts, Basseterre; Trinidad, Port of Spain, San Fernando; British Guiana, Georgetown, New Amsterdam, Rose Hall (Corentyne); British Honduras, Belize.

LONDON, ENG., OFFICE—Princes St., E.C.
NEW YORK AGENCY—Corner William and Cedar Sts.

Savings Department at All Branches

NOW MADE IN CANADA "STELLITE" CONTAINS NO STEEL

The Metal Par Excellence for Cutting Steel and Cast Iron at High Speeds

The Advantage of the Stellite tool is twofold. First, it will do from 20 to 100 per cent. more work in a given time than a steel tool of the same dimensions, working under the same conditions. It takes bigger cuts at a higher speed than any tool steel; second, it does not require so much grinding, and thus utilizes the time of the operator at the machine instead of at the emery wheel.

The Reason the Stellite tool cuts so much faster than steel is because the Stellite tool is able to cut continuously at a much higher temperature than any steel tool; it will not burn, and the temper stays in the tool. Sometimes the speed of a lathe becomes so great that the edge of the Stellite tool will become visibly red, and remain so during an entire cut without the slightest injury.

Stellite is to the best high-speed steel what high-speed steel is to ordinary steel.
Costs more at the beginning, but is by far the cheapest and most profitable in the end.

MADE IN CANADA BY

Deloro Mining & Reduction Co., Limited

DELORO, ONTARIO C.P.R. BUILDING, TORONTO, ONTARIO

Sold exclusively in Canada and Newfoundland by THE CANADIAN B. K. MORTON COMPANY, LIMITED
49 Common Street, MONTREAL, P.Q. 86 Richmond St. East, TORONTO, ONT. Full particulars and price on request.

Brass Castings

Also Bronze, Copper and Aluminum

GOOD DELIVERIES
REASONABLE PRICES

Send Samples or Blue Prints to

KINZINGER BRUCE & CO.
LIMITED
NIAGARA FALLS, ONT.

Brass, Phosphor Bronze, Copper and Aluminum Castings

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

Write For Prices

Tallman's Reputation is in the Goods

Tallman Brass & Metal Co.
HAMILTON, ONT.

MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ONTARIO

DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited
Welland, Ontario

Steel Castings—"What's the Price?"

Unless you're buying something that does not vary in quality—you first determine ***what*** quality you will secure, whether you will get ***exactly*** what you want, when you can get it—and then you talk price.

Our steel foundry has not been in operation for long—but already some of our good friends and patrons tell us that our prices are mighty low considering that we are putting only first-class quality into these castings and delivering them on time.

Are you ?

How low our prices are we will be glad to indicate, if you will write us about your needs.

POINT 1 SERVICE

POINT 2 QUALITY

POINT 3 PRICE

Joliette Steel Company, Limited

Works : JOLIETTE, QUE. Office : READ BLDG., MONTREAL, QUE.
TELEPHONE : MAIN 402

"CASTINGS WITH CONSCIENCE—
Made in Canada for Canadians"

JOLIETTE STEEL

We Offer You SERVICE, QUALITY, PRICE—Will You Accept Our Offer ?

STEEL CASTINGS

From MALLEABLE STEEL, MANGANESE STEEL, CROME STEEL, Etc.

STEEL PROPELLER WHEELS
TURBINE WATER WHEELS, MILL GEARING, Etc.

THE WILLIAM KENNEDY & SONS, LIMITED
OWEN SOUND - - ONT.

STEEL CASTINGS

Manganese, Chrome, and Nickel Steel Castings from ¼ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears any size up to 18 feet in diameter without the use of patterns

Hull Iron & Steel Foundries, Ltd.

Head Office and Works = = **HULL, P.Q.**

Toronto Sales Office
205 Yonge Street

Acid Open Hearth Steel Castings
for all purposes

Dominion Steel Foundry Company, Limited

Annual Capacity 15,000 Tons

Hamilton, Ontario

ELECTRIC STEEL CASTINGS

WE CAN SUPPLY

Carbon Manganese, Alloy, Steel Castings Forging Ingots, Etc.

Write for prices and particulars

The Electric Steel and Metals Company, Limited

WELLAND, ONTARIO

Motor Lamps

There are Two Kinds

Those that save you a mere penny in their first cost — and, cost you a pretty penny in their rapid journey to the junk pile.

(Such lamps are made to sell solely through the appeal of a low, cheap price. They possess but little merit, and less quality. They cannot be relied upon for long life, or truly satisfactory results. Their low price entices the sale that ends their existence.)

There is the Other Kind

Those that cost more and are worth it. The kind that are reliable. Those that possess actual merit. That in the service they give save you many times their difference in price.

Character in lamps corresponds to character in man. Both are judged by what they accomplish, the good in them, and the life they live.

(Clasco Motor Car Lamps have character. They accomplish all that can be demanded of any good lamp. Their service proves their goodness. How much better to buy for quality, for service and for satisfaction.)

Demand CLASCO Lamps

THE CANADIAN LAMP & STAMPING CO., Limited
Ford - Ont.



MADE IN CANADA

Canadian Hart Wheels

CUT FASTER LAST LONGER
Than any other wheels on the market

Tell us the service you want performed and we will supply you with an abraser that will save you time, money and worry.

Send for one of our catalogues and tell us your troubles. We do the rest. :: :: :: ::

CANADIAN HART WHEELS LIMITED
450 BARTON ST. EAST
Hamilton :: :: :: Ontario

The Canada Metal Co., Limited

Manufacture in Canada

Our Babbitt Metals Give Excellent Service



We are Proud of the Goods We Manufacture

FOR GENERAL MACHINERY BEARINGS
TRY
Harris Heavy Pressure
THE BABBITT METAL WITHOUT A FAULT

WE HAVE EVERYTHING IN METALS
Ask for Our New Catalogue. Mailed FREE on Request

THE CANADA METAL CO., LIMITED
Head Office and Factory, Toronto Branch Factories, Montreal, Winnipeg



Made in Oval and Flat

To meet the Brush requirements of the Manufacturers, we have been constantly experimenting to keep abreast of the times, and we are therefore in a position to offer all the best labor-saving designs that will efficiently do the special work such as is required in the turning out of first-class goods.

Among the most suitable lines made by us are—

BOECKH'S "Steel Grip" Paint and Varnish Brushes

THEY work easy and have a good body stroke, being resilient and elastic. They spread the paint or varnish evenly and produce a perfect and attractive finish—no loose hairs to mar the job.

THEY ARE GUARANTEED. THE BRISTLES CAN'T COME OUT.

Special Brushes

can be supplied for every requirement for hand and machine work. Send us specification of what you require and let us quote you prices on same. Not only can we supply quality goods that will give long service, but we can save you money.



Boeckh's Factory Brooms

We make these in a variety of styles, comprising lines for use in Factories, Mills, Mines, Foundries, Warehouses, Railroads, Steamboats, etc., etc. ***For durability they are unequalled.***

If you have not a copy of our Illustrated Catalogue, kindly advise us and we will be pleased to have one forwarded to you promptly. It is a handy reference book.

THE BOECKH BROS. COMPANY, Ltd.

Offices, Warerooms and Factories :

158-168 ADELAIDE ST. WEST, TORONTO, CANADA

Are You Sure Your Electrical Wiring is Safe?

There is but one absolutely safe method of wiring. Instal a CONDUIT SYSTEM, it will eliminate all risk of Fire.

"Galvaduct" & "Loricated"
"Conduits"
HAVE NO EQUALS

Conduits Company Limited
TORONTO *MONTREAL*



THE BEST-KNOWN CABLE REEL IN CANADA

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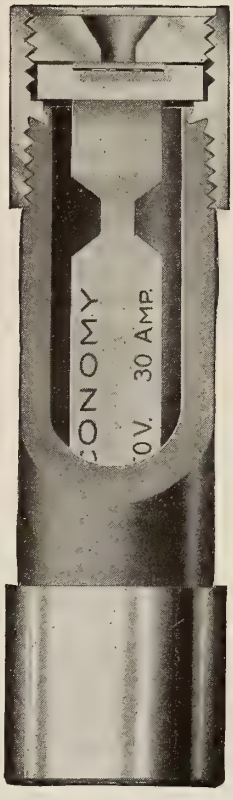
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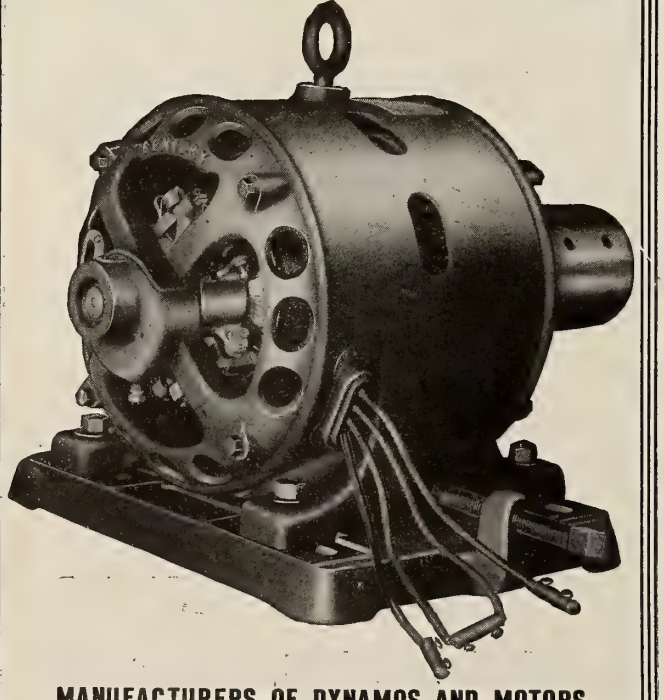
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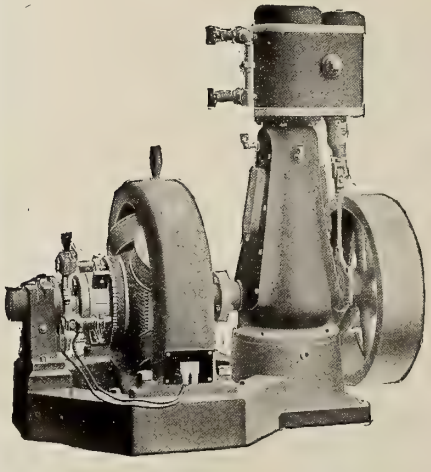


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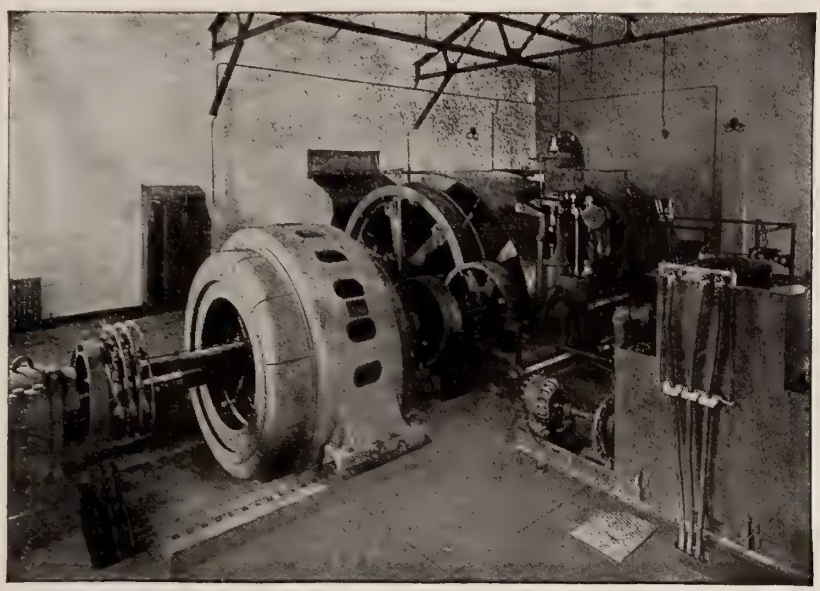
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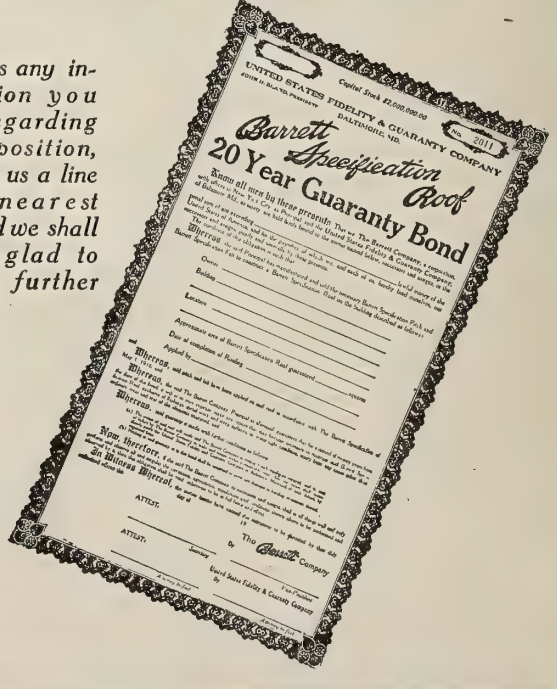
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INDUSTRIAL CANADA

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The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

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This Year's Convention.

IN the following pages, readers of INDUSTRIAL CANADA will find a record of the principal business transacted at the convention of the Canadian Manufacturers Association held last month in Hamilton. The account of the meeting has necessarily been reduced to embrace merely the reports presented, the addresses delivered and the resolutions passed. Considerable discussion arose over several matters brought up in the reports, but much of this it has been found advisable, for reason of space, to omit or condense. Readers, therefore, have before them the essence of the convention, which after all in these strenuous times is quite sufficient for average needs.

The Hamilton Convention goes down in the annals of the Association as one of the most important gatherings in the history of the organization. The Montreal Convention of 1914 was held in ante-bellum days, when few of the problems which have since forced themselves upon the attention of manufacturers, were in evidence. The Toronto Convention of 1915 came too soon after the outbreak of war to enable members of the Association to obtain an adequate view of the conditions which were then developing. But this year, the outlook has become more settled. Manufacturers know pretty well where they are at. Industry has become thoroughly organized for war-time purposes, while attention is being directed, in advance, to the days which will follow the end of hostilities, when a period of readjustment will have to be faced.

There was a large attendance at the meeting and the proceedings were followed with close attention. Members seemed to be seized with the importance of the matters under consideration and subordinated their personal affairs and pleasures to the business in hand. As hosts, the manufacturers of Hamilton proved themselves to be adepts and the various entertainments provided, both for members and the ladies who accompanied them to Hamilton, were thoroughly enjoyed.

The New President.

IN accepting thanks for the honor conferred upon him in his selection by the Association as president for 1916-17, Colonel Cantley remarked that he regarded his election as a tribute to the Maritime Provinces. In a sense, Colonel Cantley is the first purely eastern man to occupy the office of president in many years. Senator Curry, who filled the office in 1911-12, is, it is true, a Nova Scotian, and his industrial career has been associated largely with Amherst, but latterly his interests have centred in Montreal. Colonel Cantley, on the other hand, has always been a resident of New Glasgow, and the Nova Scotia Steel & Coal Co., to the development of which he has given the best years of his life, is a thoroughly eastern enterprise.

The new president is an officer of whom the Association may well be proud and in whom they may place reliance. He is a self-made man. Starting life as a messenger boy in the office of the Western Union Telegraph Co., he became a telegraph operator and was stationed at the Drummond Colliery. Then, following an explosion, which wrecked the plant, he abandoned his career as a telegrapher and received employment in a general store. The years that he spent in this establishment he regarded as the equivalent of a college course.

After a short period, during which he conducted a hardware business on his own account, he joined the staff of the Nova Scotia Steel & Coal Co. This was in 1885, thirty-one years ago. The plant was small and there were few indications that the enterprise would ever reach the

proportions it has attained to-day. However, Colonel Cantley, was willing to take a chance and he accepted the position of sales agent. From that time until the present day, he has advanced step by step in the service of the company. He is now both president and general manager.

Colonel Cantley is endowed with several characteristics which have tended to bring him to the front in the iron and steel industry. He is exceedingly active both mentally and physically. He has great determination of purpose, coupled with power to concentrate his mind on one line of action. He is of an inventive turn and has personally introduced appliances in the company's plant to save time and labor. He is above all a man with singleness of purpose. To him the advancement of the Nova Scotia Steel & Coal Co. has been the great objective, and he has not dissipated his energies in other directions. The Association may well expect to find in such a man an able head.

Sir George Foster's "Call to Action."

IN no published review of the situation, that has come to our notice, has the very grave problem that Canada will have to face in readjusting production to normal needs after the war, been more concisely and forcibly expressed than in Sir George Foster's "A Call to Action," published in the *Weekly Bulletin* of the Department of Trade and Commerce for June 5th.

Sir George cherishes no delusions with regard to the future. He believes that a serious testing-time awaits the country. To his mind that time will be even more critical than the period which marked the plunge from peace to war two years ago. While the opportunist would leave to coming days the solution of difficulties as they arise, Sir George is evidently of the opinion that now is the time to make preparation for the handling of conditions which must inevitably be brought into being.

With the wisdom of Sir George's proposal to convene in the autumn, a convention of business men to take counsel together and devise plans whereby the period of readjustment can be met with the least possible dislocation of business, financial depression and popular distress, few will take issue. It seems a sane and sensible course to pursue. And further, his suggestion that from now until that convention, much study and thought should be bestowed on the problems at issue, will be generally approved. Sir George has appealed to the Canadian Manufacturers Association, along with other organizations, to give their help and co-operation in the movement and it is greatly to be hoped that members will assist by following out the suggestions he has laid down in his "Call to Action." "If," says Sir George, "they will begin at once to examine, to think, to discuss, and to confer with one another in their respective fields of work and activity, they will be better prepared to answer certain fundamental questions which must be asked and answered before our productive and distributive capabilities become properly mobilized and energized for the great work that lies before us."

Idle Machinery.

THERE are two points brought out by Sir George Foster in his "Call to Action" that merit close consideration. Sir George points out that so much business has been coming practically voluntarily from the Government to the manufacturers that the latter have no longer needed to maintain an efficient selling organization. Industry, in other words, has been spoon-fed and there has been no necessity to exert oneself to get business. The other matter to which he refers has been the loss of former connections by reason of the devotion of manufacturing plants exclusively to war orders.

It is axiomatic that to leave machinery idle or to allow a staff to forego its usual duties is to reduce the efficiency of machinery and staff very seriously. A man or a machine becomes efficient only through concentration on the one business in hand. We cannot expect those industries, which have given up everything to fill war orders, to jump back immediately into their former work with the same degree of effectiveness as before the war. It will take some time to build up the organization, both inside and out, to an equally efficient standard.

One speaker at the Hamilton Convention last month, in referring to this phase of the subject, pointed out that in England the Government was already taking steps to relieve manufacturers of much of the burden of war orders by establishing national factories for the production of munitions and other supplies. The idea is to enable manufacturers to get back into their regular lines of work before the end of the war, so that in the trying period which will follow the conclusion of hostilities, they may be in a position to make an effective bid for world business.

Sir George was right in directing attention to this matter in Canada. Manufacturers would be well advised to keep their eye on the time, which may not be far distant after all, when war orders will come to an end. Then it will be found that those who have attempted to keep their regular business going steadily and who have maintained their selling organization all along, will be much better off than their former competitors who allowed these things to slide.

What is the Significance?

READERS, who are accustomed to glance over the department, "Among the Industries," which appears each month in INDUSTRIAL CANADA, will doubtless have noticed during the past few months considerable reference to building activity among manufacturers. There are not so many new plants, it is true, though quite a number of them seem to be under way, but the number of enlargements and additions to plants is quite large. It evidently indicates that industry is in a healthy condition and that manufacturers have confidence in the future.

The information that the United States Steel Corporation is at last getting started with the construction of its proposed plant at Ojibway, on the Detroit River, is signi-

ficant. It may be taken to mean that the management of the Corporation feel assured that after the war this country will offer a good field for business. Of course, present activity at Ojibway has nothing to do with the war. If construction had started in 1914, and a plant had been rapidly put up, it would obviously have been with the intention of sharing in war orders. But the Corporation is starting in 1916; it is going ahead in leisurely fashion and on a big scale. It is evidently carrying out the original plan, irrespective altogether of what may or may not eventuate in connection with the war.

Such Canadian manufacturers as have experienced doubt regarding what will happen after the war is over, may take heart from this object lesson in confidence. They may not agree with the view that there will be a boom in Canada but they cannot altogether resist the influence of an opinion expressed in brick, cement and iron by so important an organization as the United Steel Steel Corporation.

Inspection as a Means of Prevention.

THE Ontario Fire Marshal, Mr. E. P. Heaton, will be doing good service if he can bring it about that every city in Ontario,—and in Canada, for that matter—shall adopt the Ottawa plan of inspection. In the Dominion capital, as explained by the Fire Marshal, the fire brigade make regular and systematic inspections of all houses and buildings. The plan has resulted in reducing very materially the number of fires and the damage arising from them.

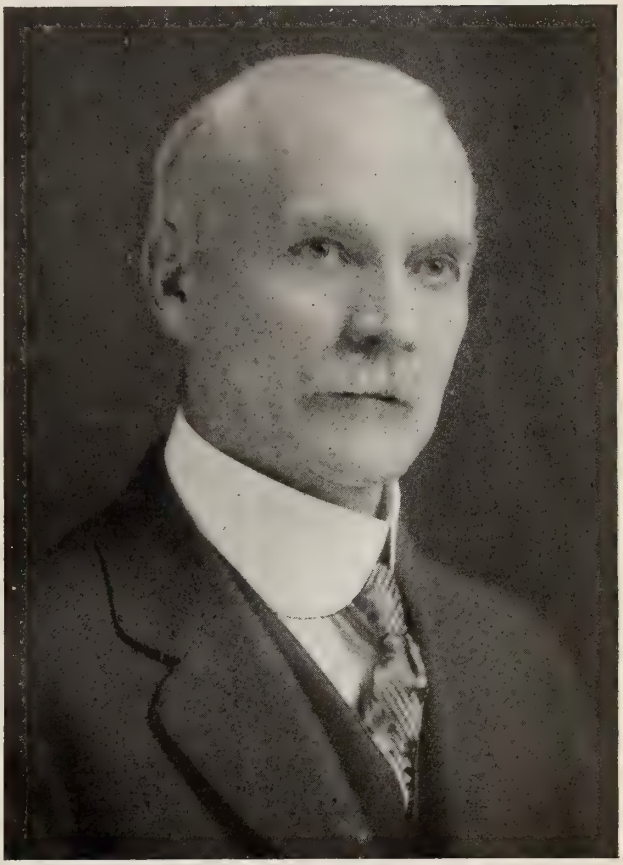
It must be obvious that members of a city fire brigade could with advantage spend a portion of the time that is absolutely wasted in lounging around fire halls, in inspecting fire risks. Of course this is done to a certain extent already but it is not general and it is work that is not thoroughly organized. If it were put on a regular basis and systematized, good results would follow. The firemen would prefer the activity to the enforced laziness of the fire halls and they would become better acquainted with the buildings and other risks in the districts in which they operated. On the other hand, the public would be compelled to keep down the fire hazards to a minimum.

Sir Thomas White's Plea for Economy.

ECONOMY was again the keynote of Sir Thomas White's able speech at the banquet of the Association in Hamilton. He has reiterated it on many occasions and as the man in control of our national finances, no one could urge it with better reason. His words fell on appreciative ears. No class knows better than the manufacturers that borrowing cannot be indulged in to the extent it has been during the past two years in Canada without imposing a tremendous burden on production. It means that a larger and larger percentage of the goods we produce must be handed over to our creditors as interest.

It may perhaps be said that individually Canadians are not economizing as they should but that corporations and businesses are for the most part doing their duty in this direction. It has doubtless been a great temptation to many firms to disburse, in extra dividends or bonuses, some of the special profits that have accrued on war account, but it speaks well for the sound business acumen of the men in charge that the temptation has been generally resisted. They realize that all our resources must be conserved and that it will be better to build up strong reserves to meet the pressure of coming years than to pay out profits in an orgy of spending.

Those narrow-visioned people, who see only the big profits of the moment, forgetting the struggles of the past and the difficulties of the future, hardly appreciate this attitude. But it is well for Canada that we have men in control of the larger industries who believe in rigid economy now and until such time as the horizon clears.



S. R. PARSONS
President, British American Oil Co., Limited, Toronto
1st Vice-President, 1916-17, Canadian Manufacturers Association.
—British & Colonial Press Photo.

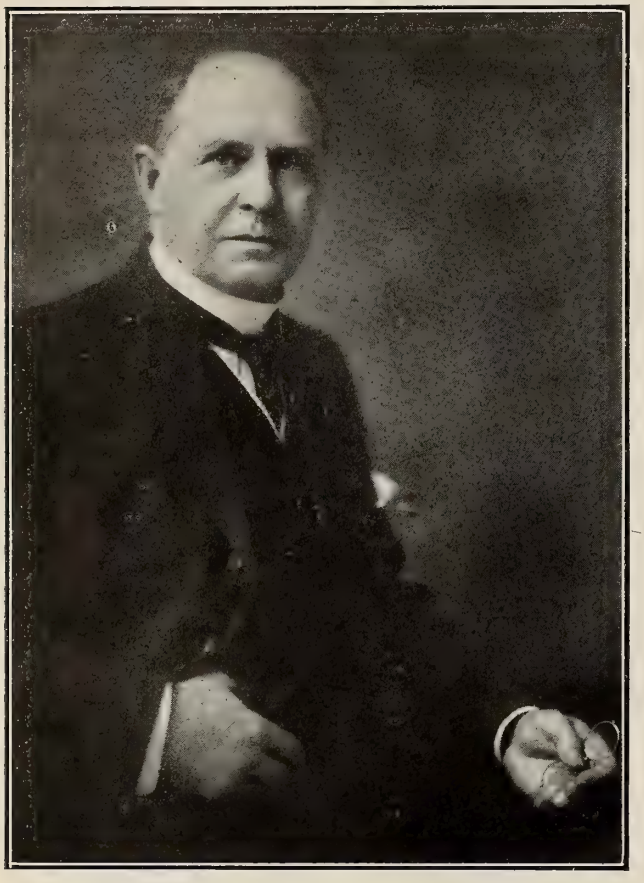
Mr. Parsons, who has now advanced to the first vice-presidency of the Association and who in the ordinary course stands next in line for the presidency, has been a most faithful officer. He occupied the position for several years of chairman of the Transportation Committee and devoted himself assiduously to the work of this department. As second vice-president last year he was able to render most effective service in connection with the general work of the head office.

THE NATION'S TASK IN COMING YEARS

By HON. LT.-COL. THOMAS CANTLEY

The Inaugural Address of the New President of the C.M.A., delivered at the Annual Banquet, June 15th

MEMBERS of the Canadian Manufacturers Association, my remarks to-night will be exceedingly brief. I wish to thank you, first, for the reference you made to my native province of Nova Scotia. That I stand where I do and occupy the position which I do to-night is due, I know, entirely to the fact that I do come from the Province of Nova Scotia,



HON. LT.-COL. THOMAS CANTLEY
President and General Manager, Nova Scotia Steel & Coal Co., Limited, New Glasgow, N.S.
President, 1916-17, Canadian Manufacturers Association.
—British & Colonial Press Photo.

and I am sure the Province of Nova Scotia will appreciate the compliment which you have done it, and on its behalf I thank you.

Now as to what lies before the Canadian manufacturers and Canadian people, I think you will all agree with me that in the coming year and in the immediate future there lies before us and before the people of Canada, and before all the working people of Canada at any rate, new duties, new responsibilities. We are waging a war without parallel in history. That war we are going to win. Of that there is no possible doubt. Neither is there any less doubt that the cost of that war, unfortunately, will be terrific; it will be great to us; in will be greater to our adversaries. We will not consider them for a moment, but we must consider ourselves, and Sir Thomas White, and the Government, and every producer in this country must pay the bill.

The men who must pay the greatest part of that bill, in my opinion, are, first, the manufacturers of Canada, and, next, the agriculturists of Canada. To enable the manufacturers of Canada and the agriculturists of Canada to meet the bill, which will have to be paid by us and by our children, we must have better facilities for working than we have to-day; we must have a better trained population in this country, both as to its agriculturists and as to its artisans, and to meet that need we must have scientific education; we must have technical colleges and we must have scientific research.

The Government of this country a few years ago appointed a commission to deal with the question of technical education. That matter was magnificently dealt with, in my opinion, by the committee or commission who handled the matter, and they presented a report which, I think, the Government had no excuse for not acting upon, and which I hold the Government to-day, notwithstanding all the problems which are before it, should act upon at once. There is no use going to compete in the open markets of the world unless we have technical education, to enable our men to compete with the trained artisans of Great Britain and Europe who have facilities infinitely superior from the point of view I have spoken of than any which we have here. We will meet any men on the face of the earth, if you give us a fair chance, but we can't do it without education, and we can't get education except through the operation of the Government, or rather the Government giving us the facilities to educate our boys.

It is too late to educate a lot of us, but our boys are growing up and they are the men that will have to pay the bill, produce the goods, find a market and compete with all the nations of the world. If we are given education along the lines I have suggested, if we are given the results of scientific research that will bring goods to the seaboard; but unless we have a fleet of ships owned and operated in this country, which will carry the products of this country to the markets of this world, we will be beaten. There is only one nation, so far as I know, in history, which had an overseas—a foreign trade—and left the carriage of its goods to foreign markets in a foreign fleet, that is the United States, and up to the present time or up to a few years ago they had no foreign trade worth speaking about in comparison with the resources, with the opportunities and with the character of the people.

I believe that, given sufficient encouragement in this country along the lines of encouragement which was given to the iron and steel industry in this country, and which I hold has produced results commensurate fully with the sacrifices which were made in this country, and which, before the war is over, I believe will have demonstrated that that industry will owe nothing to the country—I say if similar encouragement is given to shipbuilding in Canada I believe that within a generation Canadians will be in a position to practically control the shipping export trade on this continent.

We have men in the Province of Ontario and in the Maritime Provinces who are trained to a maritime life and maritime trade, who are at home on salt water, whose natural avocation for years past has been the sea, who forty, fifty, sixty years ago built ships which sailed the seven seas of

the world, and our flag and our men were seen in every port in the known world. Conditions change. We were not able in this country to keep pace with the march in our wooden shipbuilding with iron and steel shipbuilding, but we are in a position to-day, granted we are given sufficient encouragement in this country, to take up the problem of steamship building and steamship operating where we had to lay it down thirty years ago. Will we do it?

This organization has a membership of about 3,000. I think we should have a membership of quite double that amount, and my message to you to-night, Canadian manufacturers, is for every one of us to do what we can in every way we can to increase the membership in this organization. In some respects, at least, I think it will be conceded that it is, perhaps, more representative of Canada than any other institution in the Dominion, and I would like, and I am sure you would like, that the membership of this Association should be very much larger than it is, so that we could bring some influence to bear upon the Government. I do not mean that we should coerce the Government, but when you go, through your officers and through your representatives, to the Government and make representations to them in regard to the trade questions with which you are familiar, that your representatives would carry with them the weight and produce the effect on them which comes from a large membership of a large society of men who are carrying on the world's work, as we are doing it in Canada.

When this war is over we will be faced with many new problems. I am not referring now to the question of increased taxation or the question of meeting the very large increased cost of this war, but to the fact that we will have to meet conditions abroad which we have never met before. There will be opened to Canada a field for business that hitherto has not been opened, and of which I do not think we have ever dreamed. I think the markets of our Allies will be very largely open to us, I think the market of the Orient will be open to us, and I think possibly that the greatest market which will be open to us will be that of Russia, but to meet that a very great deal of courage is necessary. We will have to embark on lines which are to us at present almost unknown, we will have to adapt ourselves to many new conditions, we will have to have supreme courage to put in the plant, to make expenditures, to make ventures, to give credits which up to the present time we have had no knowledge of. Now, will we rise to the occasion?

Yes, I believe we will; and remember this, that industry has no less its victories than war. If we will work together, not only the manufacturers, but the agriculturists and every other class of producer in Canada—because we are almost all producers in Canada—and if one section in this country will not fall into the mistake and into the narrow circumscribed error of supposing that some particular thing which we are asking for is of no interest to them, but, on the contrary, will realize that what is for the benefit of one or of two must of necessity be for the benefit of the entire Dominion, then we will win. But sectionalism will only have one effect—it will belittle and bedevil, and put us down in the dust. We must be one united people, and have faith that when I come and ask you for something I am not absolutely and utterly selfish.

I hope and I believe that Canada will arise to its possibilities. The potentialities of Canada are beyond comparison and compute. The world lies at our feet. When we have the opportunity, as we will, when this war is over, I hope, I trust, and I believe that Canada will rise to the measure of that opportunity. Gentlemen, I thank you for your courtesy.

CANADIAN ECONOMICS DURING AND AFTER THE WAR

By SIR THOMAS WHITE

A Portion of the Speech of the Finance Minister of the Dominion at the Annual Banquet, C.M.A.

(Sir Thomas, who spoke in response to the toast of "Canada," dealt eloquently in his introductory remarks with the splendid part that the Dominion and the other outlying portions of the British Empire were playing in the great world war. He took a most optimistic view of the outlook, holding that the result would prove the inevitable defeat of the enemy. After a eulogy of the work of the British navy, he proceeded to discuss Canada's present and future economic position.)

MR President, I have said upon many occasions and I say now, and I am sure you agree with me, that the first business of Canada until the war is concluded is the war. The first demand upon the energies of the Government must be to prosecute and support the war. You are business men and you have been discussing business questions. We live by bread, and therefore I make no apologies for speaking to you to-night for a little time upon present conditions and the future outlook. We must remember, too, that modern war is made not only by men in the firing line, not only by munitions, but by resources and by industry at home. Therefore it is of the utmost importance to the Canadian people that we should keep ourselves strong economically, and that we should canvass these questions which you gentlemen have been discussing with the idea of being prepared for whatever may lie before us at the conclusion of this war. We do not know how long the war may last but to be forewarned is to be forearmed, anticipation may mean prevention, and therefore it is proper that we should consider our economic condition and forecast the future so far as we may be able and take such measures as may be in our power for meeting whatever conditions may lie before us at the conclusion of the war.

If I refer to the past it is only that we may draw from it inspiration for the future. You gentlemen all remember at the outbreak of this war the conditions that confronted Canada: an adverse balance of trade, three hundred million dollars in 1913, one hundred and eighty million dollars in 1914, thirty-six million dollars in 1915, and this year on account of the energy of the Canadian people, on account of the enterprise of the Canadian people, on account of the economy of the Canadian people, Canada has the magnificent trade balance of two hundred and fifty millions to her credit.

You remember that Canada was a borrowing nation, borrowing money for her enterprises at the rate of a million dollars a day, three hundred millions of dollars a year, and when the war broke out, Canada found herself in the position of having maturing liabilities in the London market and maturing liabilities in the United States, and an adverse trade balance, and her borrowing power cut off as by a sword. What has been the outcome? As a result again of the resourcefulness of the Canadian people, their energy and their enterprise, we find that not only has the trade balance been corrected, but we find that Canada has actually been able to

raise within her own boundaries for the prosecution of the war no less a sum than one hundred million dollars, of which we handed over fifty million dollars to Great Britain for the purpose of paying for munitions produced in the Dominion of Canada.

A Million a Day for Munitions.

Not only that, but two or three months ago I was able to arrange with the chartered banks of Canada for a credit of seventy-five million dollars for the Imperial Government. Your factories have been kept busy and your help have been paid by reason of the credits established in this country for the Imperial Government to pay for its orders for munitions here. You may not be aware of it but the Imperial Government is paying out a sum in excess of one million dollars a day for munitions in Canada. It is necessary that, as Minister of Finance, I should find a sum in excess of one half a million dollars a day for the prosecution of the war for the purpose of paying the expenditures of the war in Canada alone. That will give you an idea of the expenditures which are being made in this country to-day for the war; it will give you an idea of what Canada, formerly a borrowing country, has been able to do. All our maturities were met on the London market, we lost no gold, we redressed the balance of trade—the people by their energy, by their enterprise, and by their economy were able in a brief period to completely change front and from being a borrowing nation to become a lending nation, and lending to that nation to which we would rather lend than any other nation, the United Kingdom.

You remember the condition of unsettlement which succeeded the outbreak of war; that was inevitable, that could not be otherwise; you can't reverse the industry of the country without unsettlement, but considering the position which we occupied at the outbreak of the war and the interruption of our industry, may we not say without boasting that Canada has shown a capacity, an enterprise, a resourcefulness which we never dreamed she possessed? War is a terrible realist. Among other things it makes men realize their own capabilities; war greatly enlarges our conception of what is possible to us. If anyone had told me, had told you, gentlemen, two years ago that Canada could reverse her trade balance, could become a lending nation instead of a borrowing nation, could organize, equip and send forth for the defence of the Empire an army of 350,000 men would you have believed it? Yet that is what we have done.

The Present State of the Country.

Now, what are the present conditions? The present conditions in Canada are good; no unemployment; the contrary; a great distribution of money, factories engaged to their utmost capacity, retail business good, our production last year the greatest by far in the history of the Dominion, two crops in one in Canada; our agriculture instead of five hundred million dollars—the usual production—eight hundred million dollars last year. That is the condition to-day—at least that is the apparent condition to-day. Now, you gentlemen are all business men, but you know that insofar as our prosperity is based upon high prices for war supplies and upon the munition business that it is transient and precarious. It therefore behooves the business men of this country to do what you men are doing, to consider carefully the situation and to adopt such policy and measures as may be wise, having regard to the fact with which you are confronted and the future so far as you can forecast it; and I desire to say this, and I have said it so many times that it seems like needless repetition, that the great need of Canada is still production and still economy, good old-fashioned thrift and economy.

If the manufacturers of Canada, if the business men of Canada, if the farmers of Canada, if the citizens of Canada are making money to-day let them conserve their resources, let them exercise economy; if businesses, if joint stock companies are making large profits let them so far as may be reasonable save their profits. Then no question will arise as to your successfully bridging whatever may lie before; you will have abundance of working capital, you will find yourself strong at the end of the war to deal with the conditions that then arise; and if by chance the conditions are worse than your forecast, still you will be in a strong position, a much stronger position than if you dissipated your resources by the payment of extravagant dividends, or if the people of the country dissipate in luxurious expenditures their earnings and profits which may at this time be abnormal.

So that we get back to homely fundamental principles, the principle of conserving our resources, of exercising a reasonable economy. The history of the wars of the past has shown that the great danger to be apprehended, especially towards the conclusion of the war, is speculation—speculation in stocks and speculation in commodities with subsequent collapse in prices after the war is over. I believe the people of Canada who are a prudent and cautious people will avoid any such experience. I believe to-day that the business interests of the country are alive to the importance of conserving their resources in order that they may be strong for whatever the future may hold for them.

The Future Outlook.

Now, so much for the present, what as to the future? Many gloomy predictions are made as to what will happen after the war is over. Hundreds of establishments in Canada are producing munitions, and the question naturally is asked what of the time when munition orders will no longer come, when the war is at an end. Many predictions have been pessimistic with regard to that period. Personally, I am not disposed to take a gloomy view of it, but undoubtedly it is a problem that should engage our most serious consideration. We must bear in mind that Europe has to be reconstructed after this war because a great part of Europe, the most populous, the most wealthy has been destroyed and must be rebuilt, and I should imagine in the re-arrangement which may be made that Canadian products, the products of the Canadian people who have fought to save those countries, will not be the least welcome in that period of reconstruction of those countries. Certainly so far as the Government is concerned we shall have that in view.

It is possible, although it is premature to make any statement respecting the matter, that Canada may gain substantial advantages in the upbuilding of Europe and especially in the upbuilding of those countries with whose people, side by side, we have fought this great battle of civilization. Russia has been spoken of as a country of immense possibilities for trade, and I am glad that the president has referred to Russia as a great potential field for development and as a great possible market for Canadian manufacturers, but this I desire to impress upon you, gentlemen, and I am sure you will agree with me, that while governments can do much to smooth the pathway of trade, to unravel commercial knots, to keep the dust out of international machinery, the business men themselves should make these problems their closest study, and you, gentlemen, in addition to the Government, must study the possibilities of Europe, the possibilities of Russia, as a market for your products and commodities and I know you will do it.

You will also bear in mind, and the president has touched upon that, the close connection that exists between finance and commerce. You cannot develop markets without credit facili-

ties, and one of the problems that will confront us in the future in connection with the development of overseas trade is the development of closer financial relations between the nations of Europe and the Dominion of Canada. That is a matter which I have already taken up with the bankers of Canada and I would hope, without unduly dwelling upon the subject, that when this war is over Canadian manufacturers who have demonstrated their ability so admirably, so wonderfully, since this war broke out, will be able to develop overseas export markets which will be of supreme importance to them.

The president has touched upon the question of shipbuilding—an enormous amount of the world's tonnage destroyed and to be destroyed by the war. Canada possesses unexcelled advantages in her coasts and harbors, in her coal and iron and steel industries for the building of ships. That is one of the problems which is now engaging my attention and it is my hope that in co-operation with the Dominion Government Canadian shipbuilding may be one of the great industries of the future, so that we may do our share of the carrying trade of the world and have available adequate tonnage to carry our products overseas.

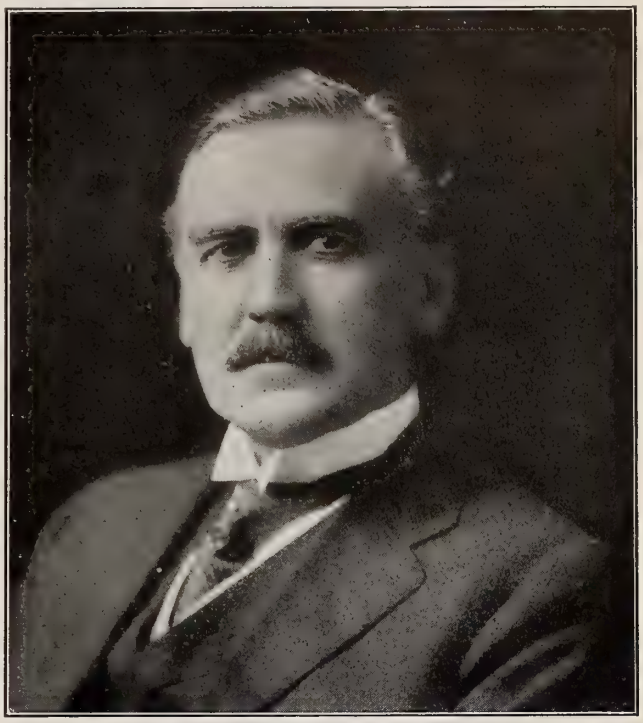
I should hope, also, although I venture no prediction, that the British Empire would as a result of this war develop preferential tariffs within the Empire. This war has taught us much; it has taught us the value of our own nationals, of our own people; the British Empire during the whole of last century, secure against foreign aggression, mistress of the seas, and the greatest nation of the world was not disposed to care whether her nationals emigrated to Canada or Australia or South Africa or any of the foreign nations of the world. This war has demonstrated the value of the nationals of the British Empire to the Empire. And I should be very much surprised, Mr. President, if as a result of this war greater attention is not paid in the United Kingdom to the direction of its immigration to other parts of the Empire.

And so with trade. A nation finds itself through no fault of its own at war. What about the products that are required in war? Are they under control of the Empire or under control of the enemy? These are important questions in time of war and it has made the Empire realize as never before the value of a self-contained Empire. These are thoughts that are suggested as a result of our experience during this war, and I should think it would be a proper policy for the Dominion of Canada to see that insofar as we are able to bring it about, our metals are manufactured in this country to be available to Canada and to the Empire in any such crisis as that through which we have been passing. These are matters also which are engaging my attention.

The Immigration Problem.

Now there is another question, immigration. I have spoken of foreign markets. What of the home market? The great home market, the steady market, the dependable market, the best market. How are you going to increase your home market? I repeat that the most important question in Canada to-day is production. We have the greatest resources I believe of any country in the world, all we need is application of capital and labor, therefore the most important questions in this country, so far as I see, at the conclusion of the war are the questions of immigration, of settlement and increased production, larger population engaged in productive work, increasing our farm production, taking up our areas of fertile land and making them productive, increasing the buying power in Canada. We are going to have soldiers coming home later on, a great home coming it will be when our boys come back. We are going to have restlessness such as Europe has never known before and it seems to me unthinkable that Canada should not loom large in the eyes of those of the old world who make up their minds they want to make a fresh start in life under better conditions.

Immigration,—our best efforts should be put forward to promote immigration and to settle and to assist to settle those of our troops and those of the troops of the Allies who have fought in this great war. This great Province of Ontario, the Province of Nova Scotia, the Province of New Brunswick and part of the Province of Quebec were settled by United Empire Loyalists and they were assisted to settle by the British Government. Can you have better material for nation building than the men who have fought in this war if they turn to agriculture? There is a field of thought opened up for action at the close of the war.



SIR THOMAS WHITE
Finance Minister of the Dominion of Canada

Now I have dealt briefly with the question of foreign trade and I have dealt briefly with the question of home trade, and while we may have a period of unsettlement, of re-adjustment and of dislocation, if the people of this country will strive to the utmost to increase their production, to economize, to conserve their resources then in my opinion we may face the future with confidence. Happy is the government that has a people like the Canadian people to whom to appeal. It has been impressed upon me over and over again, the response which the Canadian people are always ready to make to reasonable appeal on the part of their Government. Ask the people of Canada to produce and their production is almost doubled; ask them to save and your savings bank deposits increase by hundreds of millions, ask them to subscribe and your hundred million dollar loan is forthcoming. Mr. President, the people of Canada have been magnificent throughout this war. Happy the government, as I say, that has a people like the Canadian people to whom to appeal in an emergency such as this.

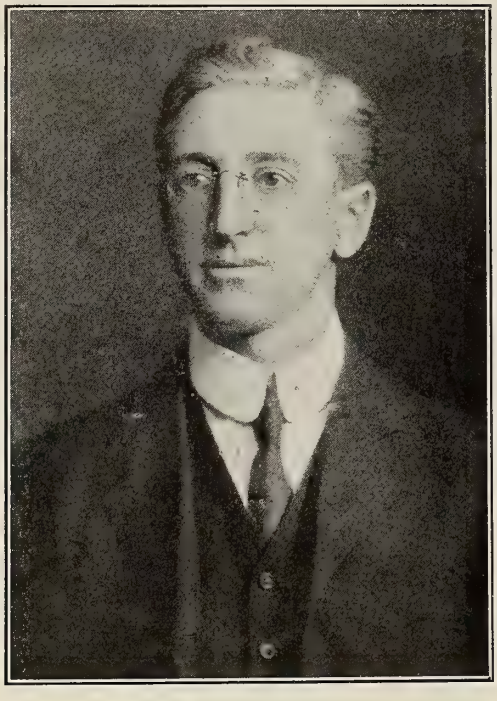
THE YEAR'S WORK IN RETROSPECT

By J. H. SHERRARD

The Annual Presidential Address Delivered to the Members of the Canadian Manufacturers Association at the Hamilton Convention

IN welcoming you to this Convention, I wish to remind you that the success of our meetings will largely depend on the interest every member takes in the discussions. The Convention of the Manufacturers Association is an annual event of Canadian importance, and will be especially important this year. Grave national problems will be submitted for your consideration. The future is very obscure and calls for wise councils, for firm courage and for loyal co-operation.

Since we met in Convention a year ago, the war situation, from a military point of view, has remained practically unchanged, with the fighting armies still locked in a death grip which seems unbreakable; while the neutral nations stand



J. H. SHERRARD
J. H. Parkhill Mfg. Co., Limited, Montreal
Retiring President, Canadian Manufacturers Association.

tensely watching for any sign of weakening which might proclaim the beginning of the end. That end still seems far distant, and while we know that final victory will be ours, we are forced to realize that success must be purchased by extreme sacrifice.

In the meantime, Canada has accomplished the impossible by doubling and quadrupling her contribution to the war, and, like our soldiers in training, has materially improved her position while giving of her very best. Our farmers are prosperous; our workmen are profitably employed; our mills are busy. A year ago this Convention urged on the producers of Canada, both the farmers and the manufacturers, that they should produce to their utmost limit, not only to assist unemployment, but especially that we might be able to supply our armies with food, and clothing, and munitions; and also that we might be able to sell enough goods abroad to balance our foreign purchases. Our farmers rose splendidly to the need, and a kind Providence rewarded their efforts with unusually large harvests that have been marketed at record prices. Our manufacturers also rose to the need and hundreds of them, with patriotic courage, ventured into new classes of product, in making munitions, and have succeeded in distributing millions of dollars to Canadian workmen, which has, in turn, benefited merchants, professional men, bankers and manufacturers. Our exports have exceeded our imports, in both the products of the farm and the factory; and the handling of this vast business has brought the earnings of the transportation companies to normal.

The making of war munitions has not only brought a considerable degree of prosperity to Canada, but it has also improved the efficiency of our workmen and manufacturers, and it has advertised Canada as a country capable of producing something else besides wheat, apples and lumber.

Some uninformed criticism has been heard of abnormal profits made in supplying shells, but it is a well known fact that, while some manufacturers have been able, by excellent management and equipment, to make good profits, many others have suffered actual distress in carrying out their undertakings. The early problems of the manufacturers of shells called for a degree of organizing ability that has not been surpassed in Great Britain or the United States, and the fact that Canadian firms are producing shells to-day, after one year of experience, at one-quarter of the Woolwich arsenal costs before the war, speaks volumes for the ingenuity and the efficiency of our people; while our contribution to the munition supply at the firing line has been very considerable, indeed. Canada's debt to the Minister of Militia in connection with the making of munitions will only be fully known when the history of our part in the war is written, but it is a great satisfaction and relief, to Canadians generally, that the unfortunate investigation which has interrupted his very urgent duties, has cast no shadow upon his integrity. He has made mistakes of judgment that are easy to criticize now, but the percentage of error should be regarded in proportion to his vast accomplishment.

A year ago we were devising means to furnish labor for our unemployed. To-day, the question of securing skilled labor is a very acute problem; and many factories are obliged to refuse orders because of the shortage of labor. This is not a problem that is confined to manufacturers alone, for farmers, and miners, and bankers are suffering from the same cause.

Over three hundred thousand of our best men are serving with the colors to-day, and almost as many more are promised. It is essential that we furnish soldiers to defeat our enemy, but it is equally essential that we feed and clothe them, and that we furnish them with ammunition at the firing line.

In Great Britain even the women have come forward, and have rendered splendid service in replacing men in industry, and releasing them for active service. But even with their assistance, conscription became necessary in Great Britain, in order that every man's service could become effective.

Has the time not come for Canada to register her men, so that those who can be most useful to the war by remaining at the work they are necessary to, shall not be recruited, and so that the remaining available men will be induced to do their duty by enlisting? We have already lost much ground that we might have occupied because we have refused to even whisper conscription. Can we longer afford to drift along with closed eyes? The problems that face us as a nation are unusual, and very grave, and call for a high order of statesmanship in our leaders, and for co-operation from all classes of our citizens.

I regret that any cause for misunderstanding has arisen at this vital time, between English and French-speaking Canadians. Our sons of English and French birth are fighting side by side, and giving up their lives together on French soil, and when those of them who are spared return to us, they will be very impatient of the old appeals to race prejudice. They will be less conscious of their rights, and more alive to their duties.

The future of Canada depends largely on the willingness of the men of to-day to yield their rights, and to sacrifice to the common good. And surely we have a noble and inspiring example from those of our sons who willingly lay aside their careers—and in many cases their lives—that a noble principle might prevail. The Crusaders of old had no higher ideal, or no more righteous cause. And the men who have gone into battle are not the only heroes; the mothers, and fathers, and sweethearts, have made their sacrifice, quite as great, and calling for as much bravery in giving up, and waiting, as in facing enemy charges. Shall so urgent and vital a need be left to those only who are willing to make sacrifice?

Trade After the War.

The question of trade after the war is occupying the best minds of the Allied Countries to-day, and, next to the prosecution of the war itself, this is perhaps the most important and urgent subject that they can study.

We are at last able to understand Germany's ability to place her goods on the world's markets at prices that defied competition. Her subtle and treacherous plan was made possible, as much by her absolute control of her people as by her wonderful capacity for organization. To-day it is known that her warehouses are bulging with manufactured goods accumulated during the war, for the purpose of again flooding the world's markets; and the Allies are studying how best to protect their markets from this invasion, and also to develop mutual trade with one another. In addition to this, Great Britain is studying how she can develop Inter-Empire trade. There is every indication that she will permanently abandon the principle of Free Trade; but will she give her Overseas Dominions a preference on foodstuffs? And, if so, will she require concessions in exchange? These are questions that will be dealt with very fully in London this summer, in conference with oversea premiers.

Canada has, for almost a generation, given British manufactured goods a very considerable preference, as a patriotic expression of good-will. Has the time come when this action on our part will bear fruit? A preference by Great Britain on our food stuffs would not increase the cost of their loaf, but it would be of incalculable benefit to Canada and other parts of the Empire. The Chambers of Commerce of Great Britain have emphasized their desire for a tariff against her enemies; for special trade agreements between her allies; and for preferences within the Empire. Before the war, when Free Trade compelled her labor to compete with the cheap labor of Europe, it would not have been expedient for Canada to increase her preference on British manufactured goods, but the changed condition of British labor, which will probably be more or less permanent, may have a very far-reaching effect in levelling some of the differences between our tariffs; and, with a more equalized wage scale, with our younger blood, with our boundless natural resources, and our geographical position, we can look forward with confidence to becoming not only the granary of the Empire, but, to a considerable degree, the workshop of the Empire.

And, gentlemen, we are going to need increased trade from abroad for our industries. We must be wise enough to prepare now for the time when orders for munitions and all other war requirements will be cut off in Canada. How are we to keep our work people employed then? How are we to provide employment for our returning soldiers? How are we to meet our largely increased national obligations, both principal and interest? The one and only solution lies in Export Trade. Our farmers are making tremendous strides in this direction, our manufacturers must not neglect their duty. Many of us in the light of past experience may not be inclined to take a hopeful view of Canada's ability to export manufactured goods, but we must remember that after the war we will live and work under new and changed conditions, that will greatly favor Canada.

The benefits due to Canada from these world changes will not fall into our lap unsought. We must mobilize our industrial forces to show the other portions of the Empire and the allied countries what we produce, and we must prosecute a vigorous trade campaign in all these markets. For this we will need co-operation, both in our manufacturing and our selling. We will need the co-operation of our transportation companies and our banks. We will need the assistance of our Government in securing information regarding markets and their needs; in providing technical education; in assisting scientific research; and, above all, in devising a scientific tariff that will enable our manufacturers to obtain their raw materials on a basis that will permit them to compete with the world.

This is an opportune time for our Government to place the tariff on a scientific basis, and beyond the influence of politics. This is an opportune time for our Government to urge trade agreements with the Empire and with our allies, and to pave the way for Canada's entry into world trade.

We, the manufacturers, must show our willingness and our determination to do our part, and we have much reason to believe that the Government will do their part.

The Government has already expressed a readiness to assist export business with what machinery it now possesses, and to provide new machinery that may be necessary; and, while the ministers were very much overworked by the unusual problems that press on them daily and by many needless difficulties that are placed in their way when their full time should be given to essential duties, still we are more than justified in requiring their co-operation now on measures that will benefit the country generally.

The Economic and Development Commission.

A year ago you were advised that the farmers of Canada, in co-operation with this Association, had petitioned the Government to provide a Commission for the purpose of studying the needs of producers, with especial reference to agriculture. This has resulted in the creation of "The Economic and Development Commission," with instructions to investigate conditions of production and to recommend to Parliament such measures as will make for better conditions both for the farmer and the manufacturer.

It was hoped that the personnel of this Commission would be non-political, but the gentlemen appointed are all worthy of the confidence of all classes of Canadians, and the Chairman, Sir James Lougheed, is a guarantee of wise and energetic action. This Commission has a very big contract assigned to it and the programme already mapped out contains promise of great benefits for Canada. But I would remind the producers of Canada that commissions do their best work when assisted by a vigorous public opinion. You have only to contrast the splendid work of the Railway Commission with that of the Commission on Conservation, or the excellent work of the Grain Commission with the Commission on Technical Education, to understand what I mean, and I would urge on this Association, and on the farmers' organizations, that they give this Commission the benefit of their assistance and advice, with an eye single to a better and a greater Canada, I am glad to know that the Commission has already obtained the co-operation of the Canadian Society of

Civil Engineers on problems that body is so well able to offer constructive advice upon.

Returning Soldiers.

One of the duties assigned to this Commission is to study and recommend a comprehensive and sufficient plan to provide for our returning soldiers after the war. This is a problem that interests every Canadian, and must be worked out wisely and generously to secure our approval.

Never has Parliament faced so large a problem. Never has Parliament had so great an opportunity to benefit Canada in benefiting her heroic sons. May it rise to its great duty and splendid opportunity, and work out a plan that will give every returning soldier his opportunity to attain prosperity; and may the Government of Canada take notice that the people of Canada expect them to rise above politics in the working out of this problem, and will be very impatient of anything short of a sufficient plan that will be ready to receive our boys when they return.

The Prime Minister is to be commended and congratulated on the prompt measures he has already taken to enlist the co-operation of the Provincial Governments in providing our disabled soldiers who are already returning in considerable numbers. May this be the forerunner of further co-operation that will place tens of thousands of soldiers on farm homes in every Province; farms that will be under sufficient supervision to insure success; farms that they will eventually be able to own.

I realize that this will involve enormous expenditure, but the money can be obtained, the security will be absolute, the profit to the country, through increased production, will be very great, and the whole country will approve of such a measure if it is big enough, and is carried out on business lines.

The Canadian Pacific Railway Company has announced a plan to place one thousand returning soldiers on ready-made farms, which is at once an evidence of the Company's patriotism and of the business wisdom of such an investment.

I trust the Commission will not only recommend a big plan to Parliament, but that they will also urge that the execution be placed in the hands of an able Commission. Such a Commission could profitably, and properly, include in its duties the control and direction of immigration.

Immigration.

Immigration, after the war, will be as great as our machinery for handling it will be, and the time has come when we should have greater control of the class of people who come to make their homes in Canada; and when they come to us they should be directed to where they can be the most benefit to themselves and to Canada.

Our immigration laws have been very careful to discourage skilled workmen from coming to this country, but they contain no provision for placing immigrants on the land; with the result that thousands of foreigners coming to this country never get beyond our cities, and become a very serious liability instead of an asset.

It is hardly likely that Europe will offer many emigrants in the near future, but there is every probability that tens of thousands of British soldiers will want to come; men who have lived in the open and who have used the shovel even more than the rifle; men who will not want to go back to desk or counter or bench, and who have met or heard of our ingenious Canadian soldiers and will be eager to come to the country which produced them. Therefore, any land scheme should be large enough to include British, and allied soldiers and to instruct them in profitable agriculture.

Ship-building.

One industry that should be developed in Canada without delay is the building of ships. The war has brought about a shortage of ocean-going ships that will probably continue for many years.

In the days of wooden ships Nova Scotia and New Brunswick were famous the world over for their well-built sailing ships, but the industry died out with the advent of the steel steamship. When we developed the making of steel in Canada, the conditions of labor in Great Britain prevented our seriously considering the building of steel ships; but very cheap labor has disappeared from Great Britain; the demand for ships, with Canada's ability to produce steel, should make ship building a possible Canadian industry. Every important country in the world considers ship building an essential industry, and most European countries give very substantial bonuses for that purpose. I am glad to know that this question will be discussed in this Convention, and I trust that a very strong resolution will be forwarded to the Government urging adequate assistance to insure the re-establishing of ship building as a Canadian industry.

The Government has been publishing an appeal to all Canadians to practise thrift as a necessary part towards the winning of this war. In the words of Sir Thomas White, "It cannot be too frequently or too earnestly impressed upon our people that the heaviest burdens of the conflict still lie before us, and that industry and thrift are, for those who remain at home, supreme patriotic duties, upon whose faithful fulfilment our success, and consequently our national safety, may ultimately depend."

These words of advice and warning are very timely now, when we are enjoying an apparent degree of prosperity, and when we are in great danger of forgetting the sure day of reckoning. No man knows so well, or has so good a reason to know, as Sir Thomas White, that the day of reckoning will come, and he is performing a national service in pointing this out through the Press. We in Canada know very little as yet of what tax burdens this war is piling on the shoulders of the fighting peoples, and our close proximity to a neutral nation that is getting rich through the war, and whose people are spending money with a free hand, is going to make it all the harder for us as a people to accept advice to save.

So I urge on every member of this Association to preach and to practise economy in the full meaning of the word. Economy, not only in our spending of money, but also economy of time, economy of waste materials, economy of lost motions in the factory, so that we may produce more, and be in a position to contribute more to the cause that so many are dying for to-day.

After the war the problem of reorganization and readjustment will be gigantic. Fortunately we in this country will be spared the heart-breaking work of beginning over again and rebuilding from desolations; but we have our part to perform in Empire building. And we have a definite responsibility for the kind of Empire that shall be. We have given of our men and treasure willingly and gladly, to the need of the Mother Country, without waiting to be asked, and without any voice in the plans. Australia, New Zealand, South Africa and even India, vied with us in leaping to the assistance of Great Britain. The cost to each has been enormous, and will be felt by generations yet unborn. We rallied to the flag without thought of reward, but we have a new responsibility towards the Empire to be, and it becomes our duty to accept that responsibility, and to offer our counsel in the upbuilding of an Empire that will endure.

Canada, at Confederation, set an example of the feasibility of a federation of apparently conflicting interests. The other Dominions have followed our lead, and it is only one step farther to extend the principle of federation to embrace these

and the Mother Country in a tangible partnership that will make the British Empire a real fact.

Sir Robert Borden has a duty to perform to the Empire and to posterity, and I trust that his presence in London in the near future will be possible, and that he will have no uncertain voice in shaping and guarding a future that is providentially in the making now.

In closing, I wish, on behalf of the members of this Association, to thank the members of the Hamilton Branch for extending their hospitality to us; and to the city of Hamilton, through the Mayor, for its co-operation. Coming as I do from the sister mountain city of Montreal, and having on former occasions experienced your royal hospitality, I not only feel at home here, but can with confidence promise every member here that Hamilton will remain a pleasant memory. I congratulate you on the splendid hotel which we are having the honor to open, and which will add an additional charm to your beautiful city.

I wish to pay a tribute to the loyalty and the efficiency of the staff of your organization, under the able management of your secretary. His report must have convinced every member here of the magnitude of the work done by the Association and of its value to every member.

I wish, too, to express my appreciation of the hearty co-operation and cordial suppport of the members of the Executive Committee and Council in the work of the past year. Much work has been done; but much work has been left undone, and is left to our successors, in the confidence that it will be well done, and that this Association will be more than ever an influence for the good of Canada.

Vote of Thanks.

In moving a vote of thanks to President Sherrard, Mr. D. J. Fraser said: "Mr. Chairman, I think everyone is just waiting for an opportunity to say how much we thank you for that valuable address you have given us this morning. In the past we have listened to many good addresses from retiring presidents, and without wishing to make any comparisons, I think this address is equal, if not superior, to any we have had the pleasure of listening to in the past."

Mr. W. C. Coulter—"Mr. President, I presume that was a motion, and I have great pleasure indeed in seconding it. I think the field you have covered has been as broad as the world itself nearly, and you have covered it well in every respect. I am sure we appreciate the summary you have made for us to-day."

The President—"I thank you, gentlemen."

IMPORTANT RESOLUTIONS APPROVED

Concrete Results of the Deliberations of Members of the Association at the Annual Convention in Hamilton

SEVEN resolutions were placed before the convention by the Resolutions Committee, and duly approved on motion of Mr. J. R. Shaw and Mr. E. G. Henderson. They read as follows:—

Votes of Thanks.

RESOLVED, that the hearty thanks of this Association be and are hereby tendered.

(*a*) To the Hamilton Branch, for their splendid hospitality, for the enjoyable programme of entertainment provided, and for other arrangements that have contributed to the success of our meeting;

(*b*) To the Canada Steamship Lines, for so generously placing this boat at our disposal, and for the delightful outing which that kindness has afforded us;

(*c*) To the transportation companies for the reduced rates authorized for this convention;

(*d*) To all the speakers at our business sessions for addresses that were uniformly interesting and profitable.

Recruiting and Production.

RESOLVED, that the Canadian Manufacturers Association, in annual meeting assembled, express to the Government of the Dominion of Canada its firm conviction that fighting for one's country is the supreme duty cast upon all men in time of war, and that, furthermore, the burden of such service should be borne equally by all properly qualified men of the nation. The Association also expresses its approval of any scheme, whether under the Militia Act or the Defence of the Realm Act or otherwise, for the complete and effectual mobilization of the entire resources of Canada in men and material which, in the opinion of this Association, should be placed unreservedly at the disposal of our country.

Daylight Saving.

WHEREAS daylight saving legislation is now in operation in various parts of the world, with acknowledged benefit to the nations that have adopted it, not alone in the saving of light and fuel which it has been the means of effecting, but in the increased opportunities for recreation it has provided and the improved conditions of health it has promoted;

AND WHEREAS certain municipalities in different parts of Canada have adopted daylight saving as a local measure, thereby giving evidence of a growing desire to share in the benefits of the reform;

AND WHEREAS independent action by municipalities that results in variation of time as between place and place can only lead to confusion and business disorganization;

AND WHEREAS we believe that the adoption of daylight saving as a national measure would be to the general advantage of Canada, and in harmony with the wishes of an increasing proportion of our population;

THEREFORE BE IT RESOLVED, that the Dominion Government be memorialized to introduce, at the next Session of Parliament, legislation that will bring this reform into effect with the least possible delay.

Industrial Alcohol.

WHEREAS alcohol, in pure or denatured form, is a necessary raw material for a large number and variety of industrial processes;

AND WHEREAS some of the processes for which it is a necessity are already being carried on in Canada, but with only moderate success, due to the lower cost and easier conditions under which manufacturers in other countries are able to obtain this material;

AND WHEREAS it is believed that the equalizing of such conditions would not only stimulate the growth of existing Canadian industries, but lead to the establishment of new ones, to the obvious advantage of the country as a whole;

AND WHEREAS many other countries have found it to their advantage to greatly reduce and sometimes to remove altogether the excise on alcohol when employed for industrial, scientific and humanitarian purposes;

AND WHEREAS we believe that the legislation and regulations governing this matter should be so framed as to encourage the distillation of alcohol in Canada, by making it profitable for the manufacturers to use the domestic rather than the imported product;

THEREFORE BE IT RESOLVED, that the Canadian Manufacturers Association place itself on record with the Federal Government as requesting the removal of the excise duty, or the Inland Revenue Department's profit on alcohol, always under suitable regulations and restrictions:

(*a*) When employed for manufacturing processes in which the alcohol used would be lost or unrecoverable;

(*b*) When used by hospitals, asylums and infirmaries for bathing purposes;

(*c*) When used in laboratories of educational institutions for purposes of scientific research;

(d) When used by hospitals and museums for the preservation of specimens.

Preferential Tariffs.

RESOLVED, that the Canadian Manufacturers Association testify its deep interest in and hearty appreciation of the efforts that are being made to bring about a closer economic union of the Allies for their mutual benefit in matters of trade;

THAT it views with favor an arrangement that will give first care to the development of inter-Imperial trade by means of preferential tariffs, that will next give practical encouragement to the trade of our Allies, that will, thirdly, give us the protection of our general tariff against neutral countries, and that will, lastly, place the products of enemy countries under such fiscal and other disabilities as will effectually restrict their sale in our markets.

Shipbuilding.

WHEREAS a successful shipbuilding industry is recognized to be one of the greatest industrial assets any country could possess, not only because of the large number of highly skilled artisans to whom it directly gives employment, but also by reason of the numerous and varied subsidiary industries by which it is surrounded;

AND WHEREAS the possession of an adequate merchant marine is essential to Canada if she is to protect and expand her overseas trade and fulfil her destiny as the granary of the Empire;

AND WHEREAS there is now a marked scarcity of ocean tonnage, due to war conditions, that cannot possibly be overtaken for several years to come, pointing very clearly on the one hand to the folly of looking to other countries for the vessels of which we are so much in need, and on the other hand to the exceptional opportunity now afforded for laying the foundation of a successful shipbuilding industry of our own;

AND WHEREAS the practical encouragement which other maritime nations have given and are giving to the development of shipbuilding precludes the possibility of a similar industry being operated successfully in this country without some form of aid that will at least put it on an equal footing with the competition it will be called upon to face;

AND WHEREAS consideration should also be given to the question of equalizing the costs of operating vessels after they are built, due to variations in wage schedules and other forms of expense;

THEREFORE BE IT RESOLVED, that the Canadian Manufacturers Association in annual meeting assembled, firm in the belief that this matter should receive immediate and serious consideration at the hands of our Government, places itself unanimously on record as favoring the policy of liberal encouragement, by subventions or otherwise that will ensure the establishment of a shipbuilding industry in this country on a profitable and permanent basis;

FURTHER RESOLVED, that it constitutes its general officers, together with all its past presidents, a special committee to wait upon the Prime Minister and his colleagues, to press for action and to work out details.

Industrial Research.

WHEREAS the conditions which Canadian manufacturers have been called upon to face since the outbreak of the war, due to the stoppage of imports of many kinds of necessary material, have demonstrated beyond question the folly of leaving our country dependent upon other nations for supplies that we could and ought to provide for ourselves;

AND WHEREAS, if we are to profit by the opportunities for export trade which we believe will be afforded on the conclusion of peace, it is of the utmost importance that we bring ourselves to the highest degree of efficiency in all industrial processes and methods, in view of the keen competition we will be required to meet;

AND WHEREAS it is known that the adoption and strong administration of such a policy was one of the most potent factors in contributing to the success of German industry and commerce prior to the war, a lesson by which we should not be slow to profit;

THEREFORE BE IT RESOLVED, that the Canadian Manufacturers Association records its firm belief that the development of scientific and industrial research, on a scale commensurate with our resources and our manufacturing and commercial interests is one of the most urgent needs of Canada at the present time;

FURTHER RESOLVED, that it places on record with pleasure its appreciation of the efforts that are being made in this direction by the Minister of Trade and Commerce, the Economic and Development Commission, the Royal Canadian Institute, the Canadian Pacific Railway Company, and by our various technical schools, and pledges its hearty support to these and any other movements calculated to hasten the attainment of the object so much to be desired.



WILLIAM H. MARSH
Standard Underground Cable Co. of Canada
Chairman, 1916-17, Hamilton Branch, C.M.A.



MAYOR WALTERS
Who extended the civic welcome to Hamilton

ENTERTAINMENT FEATURES OF THE CONVENTION.

A trip by boat to the military camp at Niagara on Thursday, June 15th, was the principal social event of the convention. Through the generosity of the Canada Steamship Lines, the steamer *Chippewa* was placed at the disposal of the Association, and J. P. Steedman, one of the directors of that Company, accompanied the delegates to the military camp. The boat left the foot of James Street at 10.15 o'clock. Lomas' orchestra was in attendance, and rendered an excellent musical programme.

When the boat arrived at Niagara, Col. Mewburn, A.A.G., welcomed the delegates on behalf of Brigadier-General W. A. Logie. Leut.-Col. George D. Fearman, the commanding officer of the 120th City of Hamilton battalion, was also on the dock. The band of the City's Own unit, under the leadership of Bandmaster Morton, also welcomed the visitors. The band led the procession to the old camp grounds, where several of the overseas units are located. The 124th Toronto battalion, commanded by Lieut.-Col. Vaux Chadwick, was inspected, and a review and march-past was held, with Col. Mewburn taking the salute. Part of the Hamilton delegation then visited the 173rd battalion, commandd by Lieut.-Col. W. H. Bruce, and both the pipe band, under Pipe Major Pollock, and the brass band, under the leadership of Bandmaster MacCallum, rendered musical programmes. The battalion was paraded and reviewed. On the return trip Col. R. H. Labatt accompanied the party. A knitting contest was held on the return journey, when the winners were Mrs. J. L. McLeod, Mrs. Close, Mrs. Christy and Miss Irwin. Supper was served on the boat, and upon arrival in Hamilton several street cars were chartered to accommodate the crowds.

The convention was brought to a close on Thursday evening with a banquet, which was spread in the large banquet hall of the Royal Connaught Hotel, where the members had assembled during the three days of the convention. Hon. Col. Thomas Cantley presided, and with him at the head table were Sir Thomas White, Minister of Finance in the Dominion Government; Hon. T. W. Crothers, Minister of Labor; Lionel Curtis, Secretary of the Round Table Club; T. J. Stewart, M.P.; Past President J. W. Sherrard, Montreal; S. R. Parsons, First Vice-President, C.M.A., Toronto; W. H. Marsh, Chairman of the Hamilton Branch of the C.M.A.; E. G. Henderson, Windsor; James Carruthers, Montreal, and Robert Hobson, Hamilton. The president delivered his inaugural address. Sir Thomas White spoke very eloquently, in responding to the toast to Canada; and Lionel Curtis gave a very interesting address on the subject of the British Commonwealth, in which he argued in favor of colonial representation in the Imperial Parliament. N. W. Rowell, K.C., leader of the Liberal opposition at Toronto, and Hon. P. M. Glynn, K. C., were to have addressed the company, but were not present.

While the manufacturers were in session on Tuesday afternoon their ladies were taken for a motor drive, under the guidance of H. P. Hubbard, the chairman of the Membership Committee. The autos went along the mountain brow, then down and around the bay, across Van Wagner's beach and then to the Stoney Creek battlefield. Here the ladies were the guests of Mrs. P. D. Crerar for afternoon tea, and they returned to the hotel before dinner.

At 8.30 o'clock on the same evening a reception by the Hamilton branch of the C. M. A. was held in the ballroom of the hotel. The visiting delegates were received by Mrs. Harry Wright, Capt. (Mayor) Walters, President J. H. Sherrard and W. H. Marsh, the chairman of the Hamilton Branch of the C. M. A. Mr. Marsh extended a welcome to them on behalf of the local branch, and the Mayor gave a civic welcome to the delegates. Lomas' orchestra was in attendance and provided an excellent musical programme. Solos were rendered by Mrs. Estelle Carey Allan, of Hamilton, and Miss Morgan, of Toronto. The floor was then cleared and dancing was indulged in until an early hour.

Wednesday's entertainment consisted of an afternoon motor trip for the ladies to the Tamahaac Club, where tea was served, and a visit to the Grand Opera House in the evening, where the visitors witnessed a pleasing performance of Robin Hood.



H. P. HUBBARD
E. C. Atkins & Co., Limited, Hamilton
Under whose charge, as Chairman of the Entertainment Committee, arrangements for the social features of the Convention were carried out.

FIRE PREVENTION*

By E. P. HEATON
Fire Marshal for the Province of Ontario

MANY of you have listened to my friend, Mr. Franklin H. Wentworth, of Boston, in his scathing arraignment of the inexcusability of our national fire waste, and under the spell of his magnetism you reached the conclusion that this evil can and must be brought into subjection; yet the limit of endeavor has been reached in an effort to secure a few cents reduction in the rate we are compelled to pay for our fire insurance.

The range of your vision was at one time broader than this for at several successive annual conventions you struck out boldly for the creation of an adequately equipped Fire Marshal office by all Provincial Governments, with the expectation that you would then have created in each province a bureau charged with the responsibility of finding ways and means to combat the evil. You went further, for in the Province of Ontario, your Association, because of its great importance in the commercial world, accomplished what other organizations had vainly attempted to do for twenty previous years, and in May, 1914, you were mainly responsible for having passed a statute which is Canada's first adequate and effective Fire Marshal Act.

On January 1st of the present year, the speaker was charged with the administration of the Act, and, after according to you the credit for mainly bringing it into existence, it seems quite appropriate that I should bring to you a simple analysis of a brief experience, and under the generic term of "Fire Prevention" indicate how, by mutual co-operation, we may justify the hopes upon which the Act and the office have been founded.

To have as an ally in our work such a powerful organization as the Canadian Manufacturers' Association is most earnestly to be coveted, and while my address this afternoon may be of little practical value, may I say that much may be accomplished by frequent conference, and if you can see your way to delegate to a committee, standing or special, the broad question of fire prevention, nothing would afford me greater satisfaction than to meet them as often as desired, that in full co-operation we may together unite in plans and purposes for the benefit of all.

Canada Shows Little Contrition.

I propose to assume that the enormity of our national fire waste is recognized and understood and that, without exception, we admit it to be wholly inexcusable. We acknowledge that Canada's record is most unenviable; but, alas, we show little contrition and, so far as I am able to judge, conditions are getting worse instead of better. It is full time that we united in a campaign of education having, amongst other objects, an endeavor to inculcate in the minds of our people a correct moral attitude on this question.

After a short experience, however, I find myself looking on the subject of our fire waste from a somewhat different angle. For years we have laid stress on our "per capita" fire loss of $3.00, against an average of 30 cents in continental countries; but the more deeply I face the problem, the less significance do I attach to this particular phase of the question. The per capita loss is a feature that stands alongside of, and must be compared with the per capita wealth. The gross loss in North America is appalling, and inexcusable, but I think we must cease harping upon the three dollar per capita idea and realize the evil in some other way.

We are indebted to the Rochester Chamber of Commerce for coining the dramatic phrase "All fires are the same size at the start." Each fire is a potential conflagration, and possibly we shall be rather startled when we face the question as to how we on the continent of North America compare with European countries in the matter of the number of fires that take place. It will certainly be illuminating, if nothing else, if we face this point and ascertain if the real root of the evil is not found here.

Let me place the whole matter in a nutshell. After carefully analyzing all obtainable information, I find that in European countries, fires start in the ratio of 1 in 1,250 of the population. On the continent of North America, fires start in the ratio of 1 in 250 of the population. We therefore, at the outset, stand with potential conflagrations five times greater than in Europe.

What is there in our building construction, in the occupancies of buildings, or in our climate to account for, or justify this extraordinary condition?

If time permitted, it might be interesting and helpful to make a comparison of conditions along the lines indicated, but I must leave something to your imagination. It will, however, be of more than passing interest if I place on record one or two facts which will enable you to grasp the importance of the point I am seeking to impress upon you.

According to the latest available information, the City of London, with a population of seven and a half millions, received in 1914, fire alarms from all sources of about four thousand, in other words, 1 to 2,000 of the population.

In New York, with a population of one-half that of London, they had, in the same year, four times the number of fire alarms, or 1 to 220 of the population.

In Berlin, now very much in the public eye, with a population of two million, they had in 1914, 2,068 alarms, or 1 in 1,000 of the population. By way of a startling comparison, Toronto in 1914, with a population of less than 500,000, had practically the same number of alarms to respond to as the City of Berlin, that is 2,026, against Berlin's 2,068, or fire alarm of 1 in 230 of the population.

Dresden, with a population the same as Toronto, and corresponding to it as a centre of education and light manufacturing, had 356 fire alarms, of which 110 were false. Probably the exhuberant spirits of the students there, as in Toronto, may account for a large number of unnecessary runs on the part of the brigade.

The Case of Ottawa.

Let me give you one other illustration which I learned while I was in Ottawa a month ago. In this City in 1913, one fire occurred for every 163 of the population. In 1914, this had been reduced to 1 in 200, and 1915, to 1 in 250. Ottawa is more advanced than any city in Canada, in the matter of Municipal Fire Prevention, a point to which I shall have occasion to refer presently, and the improvement in their experience, as just indicated, is attributable entirely to the practical methods they have adopted.

Just here, may I interject a note of warning. We must not confuse the subject of *Fire Prevention* with that of *Fire Protection*. The latter we have nothing whatever to do with

*An address delivered at the annual meeting of the Canadian Manufacturers Association, Hamilton, June 13-15, 1916.

to-day, yet, in passing, I may remind you that the cost of our fire protection in all cities on the continent of North America is infinitely higher than in cities of a corresponding size in Continental Europe.

The entire cost of the City of London Fire Department is 19 cents per capita; of Paris, 21 cents; of Petrograd, 22 cents; and of Berlin, 26 cents. The average cost per capita in Canadian and American cities is $1.53. I think it safe to say that, taking city for city, the protection on this continent is infinitely superior to that of cities of the old world. It should be in view of its tremendously increased cost, yet, in spite of, not because of, the protection, our experience is as I have briefly outlined to you.

In order to develop fire preventive methods, there are certain things we must know, and my brief experience as Fire Marshal has emphasized how far we fall short of possessing ascertainable knowledge. This has become so apparent that two of the important functions of our office have been irresistably brought home to us. It is necessary that we should, first of all, have reliable data as to both the number of fires occurring in the province, and the amount of loss sustained thereby. It may surprise you when I state that nowhere in Canada is there to be found even a reasonably accurate estimate of either of these two features; but when it comes to localizing the same by counties, or even provinces, we have no source from which we can obain even an approximate guess.

Let me illustrate what I mean. We have been indebted for years to the *Monetary Times* of Toronto, for the best fire loss statistics, and in their New Year Day number of 1916 they furnished as a result of their weekly tabulations a gross estimate of the fire waste in Canada for 1915, of a little more than thirteen and a half million dollars. As a matter of fact, we now have a record of fire losses actually paid by insurance companies for that same year of over eighteen million dollars. To the figure of eighteen million must be added losses paid by insurance companies which made no return to any Government, losses sustained by property owners in excess of that recovered from the insurance companies, and losses upon which there has been no insurance at all.

I have done some guessing in my own time, but I shrink from making any guess as to the amount that should be added to the record of losses actually paid for these presently unknown factors.

Accurate Statistics Needed.

One thing is absolutely sure, that what is supposed to be the best statistical authority in Canada is found woefully deficient. So far as our own Province is concerned, we must know *definitely and positively* how we stand in regard to the fire waste. We must do so before we can possibly entertain any thought of adopting preventive measures, and one of the important functions of the Fire Marshal's office must be the obtaining and recording of full and accurate statistics on these points.

In view of the admission we are bound to make as to our inadequate statistics, it will not surprise you to know that we are equally deficient concerning *causes of Fires*, and it is equally necessary that we should establish reliable information on this point. It has not been anybody's business up to this time to make any enquiry as to the origin of a fire. It is true, the insurance companies, through their adjusters, do make some little effort to establish a cause; but that information is not open to the public, and if it were, it is questionable if it would be of the slightest value. At least 50 per cent. of the fires which occur are described by the laconic expression "Cause unknown." We must reduce the unknown by the assignment of a definite cause to a much larger number of fires, and it is the second primary function of the Fire Marshal Office to bring this about.

Reverting once more to our brief experience, we have already demonstrated one prolific cause of fire, which you as manufacturers can remove to a considerable extent, and in the doing of which you will be introducing a prime element of fire prevention. We have demonstrated, beyond any doubt, that defective electrical connections (in which I include imperfect and deteriorated installations, overloading, and tampering with fuses and safety devises) are responsible for a much larger number of fires than we are willing to admit. Electricity, like fire, is a good servant, but a bad master; in its continued development of adaption and use there is a growing menace and, unless we keep it in control, we must necessarily suffer the inevitable penalty. Wilful transgression of known fundamental elements of safety must be punished; provision is being made to reach this, and we must look to manufacturers to set a good example to the rest of mankind by maintaining a high standard of efficiency which, as I have said, will constitute an essential element of fire prevention.

Once we get our facts established, but not until, can we intelligently apply effective remedies, and it would be presumption on my part to attempt an exposition until the facts are established.

Simple Preventive Measures.

There are, however, one or two simple fundamental preventive measures that I may briefly refer to ere I close. The Honourable W. C. Redfield, Secretary of the Department of Commerce of the U.S.A., speaking on a recent occasion on the subject of fire waste, condensed a whole volume of theory into these two short sentences: "The practice on which the diminution of the fire waste must go on is perfectly clear to me. It ought to be on the same principle on which physicians combat disease—unselfishly trying to destroy that which makes for their own professional existence."

Mr. Redfield places the responsibility where I am sure many of you think it ought to be placed, that is with the insurance companies themselves; but the unselfish spirit of the physician has scarcely yet become a dominant factor in any sphere of commercial activity.

In fairness to the insurance companies, we must admit that they have pioneered the way in fire preventive methods; nevertheless, it is evident to any observer that their practices tend to increase, rather than to reduce the fire waste. I think, however, I may safely say to you that they will probably have the opportunity within the next year or two of demonstrating in this province a much more serious regard for preventive methods than they have hitherto shown; the problem will probably be put squarely up to them that they must eliminate the cancerous sores caused by their own operations, and I believe they will rise to the occasion.

This Association can, in the matter of Fire Prevention, continue the work of education, and here we meet on common ground, for a further function of the Fire Marshal office must have the same object in view.

Educate! To this end we must define the problem of the fire waste so that the average man will understand it. We must realize that the people of this continent as a whole, are quite indifferent to the matter; do not let us labor under any delusion that it is not so. It is. Nevertheless, do not let us slacken our efforts to bring about a better state of things. If we cannot awaken the conscience if this generation, let us endeavor to reach the children, so that the men and women of the succeeding one may have a new ideal. Here I believe we can produce a maximum effort with unforseen possibilties, and here we meet a feature upon which you individually can help in achieving far-reaching results.

During my recent visit to Ottawa, I was given the privilege of addressing the pupils of seven of the largest public schools of the city, and I am firmly convinced that it will not be long before lessons on fire waste and prevention will form a part of the curriculum of our school system.

I would also like to draw your atention to the demonstrated benefit of "clean up" campaigns. Hamilton, Ottawa, Toronto and Montreal have made successful efforts, but I am looking for a province-wide campaign under proclamation of our excellent Governor, and in this direction you can individually, and as an Association get at the back of a most important adjunct of the Fire Prevention Movement. It is self evident that it is cheaper to clean up than burn up.

How Ottawa Prevents Fire.

You have not forgotten, I hope, the facts I gave you regarding the ratio of fires to population in the City of Ottawa. To what was that result attributable? I answer that it was due to the one source which stands out pre-eminently as the supremest of all features of Fire Prevention—inspection by uniformed firemen.

Listen please! As a result of a regular and constant inspection in Ottawa, there was but one fire alarm, during the whole year of 1915, from the mercantile area of the city. The whole continent is waking up in this regard, and from all quarters we are receiving the most surprising evidence of the value of inspection of this kind. I cannot go into details; but if you ask me to indicate how you can best help along the fight against the fire fiend, I say make it your business in your own city or wherever you have a paid brigade to see that the idle time of the firemen is directed into this essential and profitable channel.

A story is told (probably it never occurred) that a visitor to an insane asylum had been shown through the institution, and had been impressed with the cures which had been effected. On leaving, he enquired of his guide, "But how can you tell when a patient is cured?" In reply, he is alleged to have pointed to a trough, and to have said, "We keep that trough supplied with running water, and the patient is told to empty it. Some, he said, bail vigorously without diminishing the quantity; but those who aren't insane first turn the water off at the tap." I leave you to make your own application of this evident fable.

The demand for conservation, for the elimination of waste, and for the utilization of by-products is coming to us with a clarion call from the arena of the world's conflict; that the call will go unheeded we cannot, dare not believe, even although we now only catch the vision of future possibilities. The programme of this Convention betokens activities for conquest among which, may I hope, some place may be found for the subject I have so inadequately brought before you.

THE PROBLEM OF INDUSTRIAL RESEARCH IN CANADA

By PROFESSOR J. C. MACLENNAN
University of Toronto

Delivered before the Annual Meeting of the Canadian Manufacturers Association at Hamilton

MR. CHOWN has laid before you the idea of the appointment of a general Commission representing the Government of Canada to deal with the problem in its broadest aspect. Now some of us are heartily in support of that proposition. We realize at this very minute you have buildings in the University of British Columbia lying vacant, you have buldings in the University of Saskatchewan lying vacant, and in Manitoba, and in Toronto; you have millions of dollars of plants lying there and not half a dozen men working in the place. That is the greatest industry, gentlemen, that you have in Canada; it is producing a product of the highest type that this country can produce. You have more capital in that institution and in McGill and in other university institutions generally than in all the railroads put together nearly, and sometimes you forget it. Now it is necessary—I cannot help feeling, as a Canadian, that it is necessary for us to make that an efficient piece of machinery. There is no reason why those buildings should not be used winter and summer, and day and night if necessary. We have placed a million and a half dollars in a technical school in Toronto when this state of affairs exists. To me that is an absurdity. We do need a technical school certainly, but we need effort produced and carried out to-day that will utilize those other buildings lying dormant at this very time. That is what this country needs.

Universities Not Luxuries.

All our universities have been looked upon as a sort of luxury—institutions where you send your young men to get culture. It doesn't seem to have got into your head it is a simple business proposition, and you ought to use those in every possible way to fasten on their activities to your industries, so that you will make them prosper and improve them, and make additions to them, and have about you an army of young men representing the product of the best brains that exist in those places. I am always trying to work that out, and what many of us feel is this lack of co-orination. Your industries are not co-ordained to that organization, and such a body, a commission of the kind I mention, free from politics, men, but men who have clear vision, men who have exact knowledge of what is done elsewhere and in other countries, and what can be done here, men who can modify views to meet local circumstances—the appointment of a commission representing the Dominion of Canada, is absolutely necessary at this present time.

A Survey of the Field.

Further than that, one of the things that commission would probably do would be to take cognizance of the activities in these various institutions at the present time; it would take cognizance of the work that could be, or will be done, or is being done by such bodies as are represented by Messrs. Little at the present time; of the work that would be done by scientific men in your own factories in solving your individual problems; it would take cognizance of the material brains this country is producing, and could co-ordinate that and bring it together and make us all harmonious, working together, building up what we most need in this country, a nation; instead of individuals working here and there, clashing now and again, you would have a knowledge-directed force in that commission which would mean greatness and prosperity before our country.

Now, again, I am asked sometimes, have we the material? All I have to say is, that when the Mellon Institute was founded, it was founded by Mr. R. K. Duncan, who graduated in my class in the University of Toronto. To-day the great General Electric Company of Schenectady has a research laboratory, on which it has spent some $200,000. If you go down there you will find the largest proportion of its expert research workers are Canadians. During last year of the honor men we turned out in my own side in the University of Toronto—and I haven't the slightest doubt it holds true of the other departments in the University and in Canada—seven of the brightest sons we have in our province, where did they go? They left this country, and are to-day working in institutions which have research laboratories, such as the General Electric. What do they get over there? They leave here because they get only twelve and fifteen hundred dollars a year. It is absurd, it is a joke. There is your best product and your power, and you are steadily feeding it into the United States, but if you had the co-ordination I have referred to, you would have that behind you in your works and industries.

A Closer Alliance.

I would plead for the recognition of the scientific effort that is made in this country for a closer alliance between the Manufacturers Association and other similar organizations and our scientific institutions, and we will have to recognize if that commission is appointed all the various interests will have to be conserved. We must not have arrangements made so that one institution will be jealous of another or fishing for this or that, because there is room for all, and that, again, is why I refer to that commission. Some have said the University of Toronto and McGill can go to the Government and take them by the throat, and get a grant for those institutions to spend under their own immediate direction. Although I am in the University of Toronto, I have dissented from that view. I say the commission should direct the whole scientific activities of the country. We want a broad outline and plan laid down that will do for, perhaps, fifty or twenty-five years, a plan by men who see clearly what is wanted, and who know exactly the conditions of the industries and the scientific ability that is lying here.

Now in Toronto we have, as the Chairman announced, an institution called the Royal Canadian Institute. One of the men who founded that institution was the late Sir Sanford Fleming. It was founded at a time when we had no high schools of any kind; we had no technically applied science faculties in our university, and that was the great body that kept the general public in touch with scientific development. That body gives lectures every Saturday evening to the visitants from Toronto and any others who may choose to come, on scientific advances.

The Bureau of Research.

About three years ago there was instituted a bureau for industrial research. That bureau was designed to meet a local need; it was designed to try to join up the forces of the university with the industrial forces that existed in Toronto and in the immediate vicinity. It has two or three plans, it has two or three projects in view. At the present time one of those is that it wishes to get in touch with every industry in this country to find what machinery you have available at the present time, and it wishes to get that information so as to tell that manufacturer what he will do with that machinery after the war is over. It aims to supply you by pamphlets and in other ways with information regarding the manufacture of products which are carried out in other countries and which are not carried out, and which could be made profitably here. It aims, further, at supplying you for research in your factory or in the university or in the buildings associated with the bureau, individuals who will carry out, under the direction of the highest scientific knowledge we have in the university, researches on particular problems and questions which you have to deal with. That is what the bureau of the Royal Canadian Institute has been organized for, and it is regular now with a constitution drawn up. We have had conferences with the local manufacturers' branch and with the Society of Chemical Industry, and with the Board of Trade in Toronto, and with the Associated Boards of Trade for Western Ontario, and we hope, if it meets with your approval, to so perfect an organization with the bodies I have referred to that they will have representatives on its Council, and through that Council carry out that work at cost.

Not Working for Money.

We, all of us, who are on that Board, as far as I know, never expect to make one dollar out of this. I am here this afternoon not pleading for any honors or any gifts; there is no office you can give me that I would take, and I am just telling you the situation as it exists, and to let you know that the organization is at your hands, it is ready for you if you will take advantage of it and co-operate with it. We are ready to help you from a national point of view to carry out the projects we have in hand.

Every summer, when May is reached, we have a regular exodus of the young men who have taken the first places in our scientific courses—where? You will find some of them to-day, the most of them, in the army; but many of them in reading camps up in the Northwest, waiting in hotels, doing all sorts of menial things to make enough money to put them through their university course next year. Wasted effort, gentlemen, absolutely. You might have every one of these men centring around such a bureau, you might have them flocking there every spring, asking, what can we do for the summer? Can we help the industry? That all could be co-ordinated. That is one of the things we are trying to do. I do not think the organization I have reference to in Toronto extends its activities beyond its sphere of influence, and the same sort of thing applies to Queen's and Montreal, and Manitoba and British Columbia. You can do much locally through your branch organization towards co-ordination between your branch and the scientific institutions, and if you do that—that is something you can do yourself, apart from the Government—you are steadily focussing towards scientific effort, and are thus going to make it very much easier for the broad commission to which I have referred.

Is It Worth While?

Summing it all up, I would like to direct your attention to this: Is that effort we have made worth while your taking notice of? Can we help you? Does it fit into a broad general scheme that appeals to all?

The selection of a powerful scientific commission for the Dominion to co-ordinate and direct scientific effort, the recognition and support of local organizations, such as bureaux of industrial research of the Royal Canadian Institute, recognition for Toronto and its district, and similar organizations for other parts of the Dominion. That is the scheme that seems to me practicable at this present time, and that is the one, sir, that I would draw your attention to—recognition of the general commission and recognition of local effort in the way I have said in the organization of bureaus of industrial research.

A TRADE INTELLIGENCE SERVICE FOR CANADA

By FERDINAND VAN BRUYSSEL
The Montreal "Star" Publishing Co.

A Speech Delivered at the Hamilton Convention, in connection with the Resolution approving the Development of Scientific and Industrial Research

THE object of the resolution is obvious: our association ventured to recommend, after the outbreak of the present war, that certain measures be taken by the Department of Trade and Commerce; Sir George Foster, head of this department, has recently announced in Parliament a policy in conformity with such recommendations; therefore, it follows that we should recognize the fact thankfully, and put the incident on record.

Furthermore, the Hon. Minister has given the public to understand that the details of the accepted policy have not yet been determined upon, and he gracefully calls for any unbiased suggestions on the subject.

Since the resolution we are proposing provides that this very general invitation will be acted upon by a committee of our association, the members attending this convention may care to hear some comment upon the main questions involved.

Sir George Foster has recalled how the war has unbalanced international trade. We are to meet these conditions by stimulating healthy production, and preparing to seize upon the exceptional opportunities for commercial expansion, certain to be offering in the course of the general business readjustment which must follow.

The Basic Facts.

Such being the case, we should know the facts about: (1) our home resources and production; (2) foreign competition and markets, and (3) technical problems standing in the way of our industrial progress.

Since investigations under these three headings are to a common end—stimulating production and enlarging trade—they are correlated and should be systematized under one central organization, namely, the Department of Trade and Commerce.

Regarding facts about our own resources and production, it need hardly be pointed out that such knowledge as may be derived from an ordinary census, decennial or otherwise, is totally inadequate. Statistics, even though accurate and up to date, are merely among the elements necessary for determining, economically speaking, the basis of any particular industry.

But it may be assumed from Sir George Foster's speech that his department will proceed to classify and index such of our industries as are able and willing to participate in the export trade of the nation. Here is an instance where the co-operation of our association will be essentially useful.

Branch Offices Needed.

Given the principle that strict impartiality must be the rule, and that the department is eager to help all concerned, regardless of political party or individual importance, still it appears that more small manufacturers than large ones will take advantage of its service. Large corporations have already invaded, to a certain extent, the export field, and many possess the means of fortifying themselves with information regarding the possibilities of trade in any foreign market. The smaller and medium sized concerns are, naturally, more in need of assistance. In order to get into the closest possible touch with all would-be exporters, it may be expedient for the Trade Intelligence Service to have branch offices in the principal industrial centres, such as Montreal, Toronto, Hamilton, Winnipeg, Halifax, Vancouver. Suppose the agent in charge of any one of the branch offices should become informed of a trade opportunity, either through the reports of our official representatives abroad, the weekly bulletins, special circulars, or even telegrams—in urgent cases—coming from the department. This agent has a list of every manufacturer, within his territory, to whom the ordinary reports are sent; also, another list of the manufacturers who have not evidenced interest to the extent of having their firm entered upon the exporter's index. Familiarity with the output of each local concern enables the agent to eliminate all those who are not in a position to compete for the prospective order. Then, he reaches for the telephone and talks with each firm in line for the opportunity. Incidentally, the agent wins over, in this manner, another recruit for the exporting battalion.

In the United States the Bureau of Foreign and Domestic Commerce maintains such branch offices, and I have heard them referred to in very much the same terms that I have used, with the object merely of offering a suggestion pertinent to the reorganization contemplated by the Hon. Minister of Trade and Commerce.

Having acquired an intimate knowledge of the potentialities and requirements of our industrial forces, also taken the best means of bringing these forces promptly into action, the next step is to properly gauge the foreign markets.

As a public service, this can only be done through the members of the diplomatic and consular corps, commercial attaches and trade commissioners working abroad in response to an intelligent impetus from the home organization.

While enjoying the privilege, as Canadians, of obtaining information and support from His Majesty's diplomats and consuls, we are to remember that these high officials have many other exacting duties to perform, which absorb much time, require qualifications different from those desirable in a trade commissioner, and necessitate continuous residence at some particular place. Therefore, it would be a mistake to exactly model the trade commissioner service on the consular service.

Agents as Well as Commissioners.

Probably it is advisable that trade commissioners with a thorough training in economics and full knowledge of the productions and trade of this Dominion, be appointed to certain countries, there to remain long enough to acquire full local knowledge, and personal influence to be used for the benefit of their mission. Still, provision should be made for sub-officials, to be known as trade agents, trade experts, or otherwise, and who, far from being sedentary, must be made to travel in order to have full knowledge regarding certain correlated lines of business. In fact, the commercial agent should be a highly specialized individual, capable of comparing the home product with that of all competitors and of detecting wherein the former is suited, or not, to any particular market. Sir George Foster already has given application to these views when he issued a roving commission to an appointee of the British Columbian lumbermen. And one realizes that an efficiency engineer and practical mechanician would be the right man to discover outlets for Canadian labor-saving machinery in European mills, for instance. Also, one

can well fancy another expert usefully spending years in countries where cotton goods are made and where they are in demand; in fact, where information applicable either in the manufacturing or in the selling of these goods is to be gleaned. It were easy to multiply such examples, but my wish is merely to illustrate the principle, without trespassing too much upon your time.

On a former occasion, gentlemen, I have had the honor of addressing you and making the remark that foreign competition and markets cannot be properly gauged, unless the commercial intelligence service be able to supplement any acquired information by "showing the goods" whenever samples are in order, or the plans and specifications in other cases. To this essential purpose the establishment of a commercial museum has now been decided upon by Sir George Foster. It only remains to express the hope that this institution will not be allowed to be diverted from its essential object of serving export trade, and also the import trade of useful raw materials not produced, or not procurable in sufficent quantities, within the Dominion.

Function of a Commercial Museum.

Commercial museums, on the plan originally introduced at Brussels, have been erected in many places, with such changes as were governed by local conditions. In Philadelphia, for instance, the commercial museum is maintained on funds mainly supplied by the State of Pennsylvania and the city of Philadelphia. Uncle Sam's trade intelligence service has nothing to do with this museum. Hence, the enlargement of trade has ceased to be the main object in view, much scope being given to the illustration of technical processes, ethnography and various educational features.

In other places the management has been poor, and the museum, from not being down to date, has come down to junk.

There are many reasons why a commercial museum should not be used for such purposes, entirely foreign to its object, as the exhibition of local manufactured articles, materials, or produce. In Ottawa there is the geological museum, and the Department of Interior has its constantly active exposition service for making known our products and manufactured goods. If there be any reason for maintaining, within or without the country, a permanent exhibition of the kind, it remains for the said department to do so.

Without insisting upon this phase of the question at the present time, I shall call attention upon the relatively important fact that, as a matter of course, local branches of the Commercial Intelligence service, if organized in the cities named, naturally must be also branches of the commercial museum. The municipalities concerned, perhaps, would evidence interest, by providing the modest premises required, should Government give service and staff.

But it were in vain to direct attention to fresh and promising industrial departures or enterprises, without also pointing out the best methods of realization. Herein lies the function of the Bureau of Industrial Research, to be operated in connection with the scientists and laboratories of our universities and private organizations for industrial research, under suitable arrangements for specialization, and provisions for the perfecting of existing installations.

If I may be allowed a short digression, gentlemen, while alluding to private firms of industrial research, such as my friend. Mr. Milton Hersey's in Montreal and the powerful organization represented at this meeting by Dr. Howe, I wish to remark that the field is vast enough to more than afford occupation for all concerned. Mr. Arthur Little seems convinced of this, for, when I had the privilege of conversing with him quite lately, he assured me that his object is to assist in meeting existing requirements, without encroaching upon any person's business. Incidentally, I believe investigations by the A. Little Corporation may lead to the bringing of much capital into Canada.

It is easy to conceive how the correlated services of economical inquiry, centralized at the Department of Trade and Commerce, would act in practice. Being conversant with our home resources and productions, the said Department will advisedly stock the commercial museum, both in regard to raw materials which might be usefully imported and to manufactured articles characterising the trade of competitors in our own market, or in foreign markets accessible to our commerce.

On visiting such properly classified collections as may be on exhibition, the Canadian manufacturer can immediately single out the samples of interest to himself and scrutinize them with the correlative data of a commercial nature, which should, of course, be provided. Such analyses, to be made, if so desired, with the assistance of the staff, must lead to the discovery of new openings for trade, or of opportunities for industrial development, or, perhaps, of existing obstacles to this development. The obstacles may reside in certain provisions of our customs tariff or excise law; in the requirement for a multiplicity of patterns disproportionate to the volume of trade; in the relative cost of labor or materials; or, again, in some technical problem which the individual manufacturer has no means of solving.

Such problem would be referred to the scientists connected with the Bureau of Industrial Research. A logical conception of this bureau is that it should be the central recording and transmission office of all applications concerning any one of the laboratories participating in the public service.

The advantages of this arrangement are obvious and need not be enumerated. It is also evident that the most suitable location for a bureau, so understood, would be at the commercial museum, wherein the greater number of questions for industrial research are likely to arise, since analysis of trade subjects would be there of constant occurrence by concerted action of the visiting manufacturers and of the staff.

It is almost needless to observe, gentlemen, since the wording of the proposed resolution is explicit, that the adoption of this resolution does not in any manner commit the members of this association to a definite expression of opinion on all the questions indicated. Such of these questions as may be new, or which have already been discussed sufficiently, would merely be taken up by the Commission and commended, with proper reservations, to the attention of Sir George Foster, on the occasion of the announced enlargement of the Department of Trade and Commerce. Indeed, there are other questions which should not be omitted on that occasion. For instance, one imagines that a logical reorganization of the department would entail the apportionment of its duties amongst highly specialized divisions, one for treaties and tariffs, one for commercial intelligence and for directing the exterior staff, one for collecting facts regarding internal industries and production. To this last division might be delegated a very important mission connected with one frequent and deplorable form of waste, the waste of capital and energies in overproduction. Suppose it be established that the capacity of existing plants suffices for meeting any existing demand, whether for local trade or export, should not measures be taken, at least in the form of proper warnings, if not by license restrictions, to prevent the erection of additional plants of the same description? On the other hand, under-production must also be guarded against: many subordinate industries, which should logically be comprised in our national system, have been neglected or ignored altogether. But individuals are quite unable to determine over-production or under-production. Government, represented by the Minister of Trade and Commerce, alone can survey the whole field of operations, and so co-ordinate the industrial activities of the nation.

THE BRITISH COMMONWEALTH

By LIONEL CURTIS

A Speech delivered by the Secretary of the Round Table Movement at the Annual Banquet, C.M.A.

THE last two speeches have made reference to the financial aspects of the war, and I should like to be allowed to take this opportunity of saying that I feel that you yourselves hardly realize here what effect it has had in the Old Country—what effect your financial handling of the situation here has had there. I think any one in the Old Country who knew Canada, never had for any moment the least particle of doubt as to what you would do with your men whenever the future and fate of the whole Empire was at stake, you know in England we are not a very imaginative people; we were pretty well accustomed to your borrowing from us. I venture to say two years ago the most imaginative Englishman would never have dared to foretell that within two years you would not only be pouring men by hundreds of thousands into the battlefields of France, but you would be actually lending money by millions of pounds to the Imperial Government. Gentlemen, I wonder if you appreciate how that has been felt in England?

It is pretty difficult to talk of Canada without talking of the British Empire, and, therefore, I hope you will be lenient with me if, in trying to talk of the British Empire, I talk to you a good deal about Canada. I have stumbled back into talking of the British Empire, and I asked Mr. Murray, and he was good enough to assent to my request to put down my toast as "The British Commonwealth," and there is a good deal behind that, gentlemen. It is empires and emperors we are fighting, and as Sir Thomas said, the principle for which we are fighting is the negation of the principle for which those empires stand. We are fighting for freedom, and we are fighting for freedom in the form in which we now understand it, the form of self government. Germany was not striking at Serbia, or Belgium, or even France. Those were mere obstacles which stood in the way of the ultimate object at which she was aiming. You and I know she was striking at the British Commonwealth, and through the British Commonwealth at the principle of self-government for which that system stands.

The Principle of Self-Government.

Now I want to say, if I may, a word on this principle of self-government. You, gentlemen, know, for you are taught in your schools, a good deal more than I do of its development in Canada. I need not tell you that that development, from the time when Wolfe stormed Quebec, has covered close on one hundred and fifty years. Now, it has been my curious fortune to pass a good part of my life in a part of the British Commonwealth in which all the processes through which Canada went in the course of that one hundred and fifty years were actually compressed into less than ten. I first crossed the Vaal River with a rifle in my hands; I first lived in the Transvaal under military law; I saw civil government founded under the form of a Crown Colony; I saw that Crown Colony converted into a colonial self-government, and finally it was my good portion to be able to take part in the movement for the South African Union.

One day in the course of that movement I had to address an audience at Kimberley largely consisting of the men who had defended that town, and I put the case of union to them. I pointed out to them as long as South Africa was divided into four separate states we had no more control of South African affairs than Canadians had of Canadian affairs so long as you were divided into six or more provinces. I pointed out to them that it was from that defect in our institutions that the whole of our troubles in South Africa really sprang, and I urged upon them the adoption of the cure which was to establish in South Africa one Government answerable to the people of South Africa as a whole, competent to settle with finality any difficulty which might arise between one part of South Africa and another.

Gentlemen, do you realize what that proposition meant to those men? It meant nothing more nor less than this—it meant that all the British in that country, including Cape Colony and Natal, would be placed under a Government which consisted of the Boer generals whom we had been fighting. As you know, that has been so, and that was the proposition that I was putting before those men, and the argument I used was this, that we as Britishers were not in South Africa to force the British language or the British common law or ways of speech or thinking on them; we were not there to Anglicize South Africa, that was an impossible task; we were there to bring to South Africa the ideals, the institutions, for which the British commonwealth stands, that is the principle of responsible government.

What Might Have Happened?

I appealed to them on that ground, and I am bound to say, gentlemen, that it was on that ground we carried our appeal with the British people in that country, for had we not carried that, South Africa could never have been united. But after that meeting was over I remember one man coming up and saying to me, "Now, Mr. Curtis, I want you to answer a question. You have told us here that as Britishers it is our duty to establish a South African Government, and when we have established it to obey it, even though we are in the minority. Now, if that Government is going to be General Botha, well and good, but suppose it is not General Botha, suppose it should be General Hertzog and General Behrs, and suppose, when those men are in power, the fate of the Empire is at stake in war, those men will declare the neutrality of this country, which in plain words means independence. Those men will tell you, Mr. Curtis, that your duty is to remain neutral, and all the time the Imperial Government will be telling you that your duty is to fight. Which of those two are you going to do?"

Now I don't know, gentlemen—I won't enter into your politics—whether there is a probability of Mr. Bourassa being Prime Minister of this country, but in South Africa we were dealing with real possibilities. If it had not been for the statesmanship of General Botha, nothing more possible than that men like General Hertzog and General Behrs might have been in power in South Africa at the outbreak of this war, and then we should have been in that position. The Imperial Government would have been calling on us to do one thing and the Dominion Government calling on us to do another. Now, sir, as a man born and bred in England, who for over twenty-five years of his life had felt that as a member of that community, as a member of that self-governing community, he carried the full responsibility of government on his back as a voter does, I realized when that question was put to me the false position in which I was placed, and I made up my mind that instead of attending

further, as I had hoped to do, to South African politics, I would sift this question to the bottom.

Gentlemen, I am not the only man who has found himself in that position. The other day the Prime Minister of Australia, Mr. Fisher, the leader of the labor party, vacated his office, came to England as High Commissioner, and I want to read you, and they are very brief, the first words he uttered on reaching the shores of England during this war. Now let me add that Mr. Fisher began life as a Scotch miner: "If I had stayed in Scotland I should have been able to heckle my member on questions of Imperial policy, and to vote for or against him on that ground. I went to Australia; I have been Prime Minister, but all the time I have had no say whatever about Imperial policy, no say whatever. Now, that can't go on, there must be some change."

The Key to the Question.

Those are weighty words, and the subject upon which I want to talk to you to-night is what kind of change it must be, and my excuse for talking to you on that subject is that I have attended to nothing else for the last six years. I believe the key to that question will simply be found in our asking how you in Canada and we in South Africa have attained the measure of self-government we have. And, really, one must confine the question to Canada because it was in Canada the whole system of Dominion self-government was worked out. I need not tell you that seventy or eighty years ago Canada was governed pretty much as Germany is to-day. You had an elected Legislature, but the Ministers were responsible to the Crown. Now you know what responsible government meant to you. It meant that those Ministers were to cease to be responsible to the Crown and become responsible to the people of Canada through the Parliament of Canada. It meant that or it meant nothing else. Government, as some doubtless well know, must always rest in the hands of the few, but the whole question is this between Germany and us, whether that one individual or those few individuals are to be responsible, as the Kaiser claims, to God on high, or whether, as we claim, to people who are ruling themselves.

It is a very simple and plain issue, and a system under which rulers are answerable to the people themselves means nothing more or less than this, that the people can at will change those rulers; they can turn them out of office or continue them in office, and when they have turned them out of office they can put others in their place. Now, that was the change which was effected, as you know, on the advice of Lord Durham and under the superintendence of Lord Elgin, but I venture to suggest that was not the only step by which you attained responsible government in this country. Even Lord Durham never contemplated that the Canadian Government was going to control the vacant lands of Canada, the immigration of Canada, or least of all, the tariffs of Canada, but what happened? That Government had hardly got into office, that Government responsible to the Canadian people, when it turned to the Imperial Government in England and demanded the control of Canadian lands, and it got that control, and then at a later date it suited the people of Canada that there should be a tariff protecting their industries, not so much against foreign nations, as against the manufactures of Great Britain. There was a great outcry in Great Britain. The Chamber of Commerce in Leeds moved the Government to veto that bill, but the bill was not vetoed. The demand made by the Canadian Government on behalf of the Canadian people to control their own tariffs for themselves was conceded by the Imperial Government, and, having been conceded for Canada, was conceded for all the Dominions.

Not Complete Self-Government.

Now, gentlemen, those are the commonplaces of the history of this country, and nothing is commoner in discussing this matter than to speak as though Canada and all the other Dominions had completely achieved self-government. In the face of such words as Mr. Fisher used, it is impossible to make that contention. In the face of the events which led to that war, it is impossible to make that contention. War was made for Canada in London, not Ottawa; the train of events which led to this war for years past was managed or mismanaged by a series of Governments responsible only to the people of the British Isles, removable only at their will and in no sense responsible to the people of Canada, in no sense removable by the people of this country. We live at a time when, beyond and before all things, we are called on to look facts in the face, and I want to suggest to you, gentlemen, that the moment this war is over, the most important fact we have to look in the face is this, that so far as these great Dominions are concerned, we have not as yet realized the principle for which this Commonwealth stands. I lay this down as an axiom that sooner or later a British subject in Canada or in any of the Dominions must and will control the whole of its public affairs to the same extent that he would control them if he lived in the British Isles. I lay that down as an axiom, and if there is anyone who does not agree with that axiom, any other remarks I have to make are meaningless. Gentlemen, how are you going to get the control of the sinews of peace and war, which the people exercise in the British Isles? Can you get it by the path you have already followed? Can you make your Ministers at Ottawa responsible for peace and war by telling the Imperial Government that they are responsible, as your Government did in the case of vacant lands and of tariffs?

No, gentlemen, you can't; it can't be done that way. It is quite true that, as a matter of business, you have got to serve that notice in London, but you have also got to serve that notice in Washington, in Berlin, in Paris, in Tokio, and in all the capitals of all countries in which you are to have the relation of peace and war. I venture to say you can't do it by any other method; it is a thing which you can do with a stroke of the pen, and when you have done it that stroke has severed Canada from the British Commonwealth. It is a declaration of independence, it is an act which touches the status of every man, woman and child in this country who claims the citizenship of this country; it has cancelled their status as British citizens.

The Alternative to Independence.

In the light of the events of the last two years I am not going to argue that that is a course which the majority of the people of Canada will refuse to take. I say that as prudent and farseeing men the only possible course is to look around and see what other alternatives are open and the only alternative that I myself have been able to find is this, to make the government which is responsible for peace and war, the whole British Commonwealth, including Canada, just as much answerable to a Canadian as it is to an Englishman.

How is that to be done and what are the consequences which have to be faced? I say deliberately that the Dominions cannot send representatives to the existing Imperial Parliament. You cannot and you do not want to send representatives to vote on English Old Age Pensions and English railways. The English Parliament as it is now is a body on which it is impossible for the Dominions to be represented. Therefore I say that the first condition of the solution of this question is that the United Kingdom should be placed on exactly the same footing as all the other Dominions, that it should be given a Dominion Government of its own, responsible to the

British people for all the same things as those for which your Dominion Government at Ottawa is responsible to the Canadian.

You have thought first and foremost to get the British people standing exactly on the same footing as the people of all the other Dominions, and when you have done that you will have divested the existing Imperial Government of all its present functions excepting the control of foreign affairs, the control of defence, the control of the great dependencies and the control of the co-relative finance. You will then, in other words, have in the old Imperial Parliament an organ of government upon which all Dominions cai be represented just as easily as the United Kingdom. When once you have freed the Imperial Cabinet and Parliament of all the functions relating the United Kingdom you have taken the first necessary steps in solving the difficulty, you have removed the first objection to making that parliament representative of all the Dominions.

But the consequence follows and I don't believe in cutting difficulties. We have passed through the time—with you two years ago—when we as a people enveloped our theme with rhetoric, when we were very chary of calling a spade a spade, and the result has been that with that tool in our hands we have dug miles of trenches and rows of graves. The time has come not to evade difficulties and cloak them in rhetoric, but to emphasize them and look them in the face.

The moment you reconstruct that Imperial Parliament so that it represents all the Dominions, it follows as the night the day that that Parliament must exercise over the Dominions the same powers as those which it exercises over the United Kingdom. It is no use burking at facts, if you have a government responsible to the people, if you have a commonwealth as a whole including those of the Dominions for peace and war, for defence, for safety, for freedom it must draw the cost of that government from somewhere and if it represents the Dominions no less than the United Kingdom so the cost of that administration must be drawn on the same equitable system, from all the communities which it represents.

The Source of Revenue.

Whenever that difficulty is faced, it is commonly assumed that the only source of revenue from which a government like that can draw its tariffs and that such a change as I am proposing to you for your consideration would mean that the power of making tariffs would have to be transferred to the Imperial Government. Now I say deliberately, and I speak as one who has seen tariffs made at close quarters in South Africa, that you cannot make the tariff of South Africa in any other place than South Africa; you cannot make the tariffs of Canada in any other place than Canada; and I go farther, you can't make the tariffs of Britain in any other place than Britain. I don't believe either that you can or that you need or that you ought raise the cost of Imperial defence from tariffs. I believe that you can raise a portion of that revenue among these various Dominions, leaving the whole question of the incidence of taxation to them, leaving them not only their present control of tariffs but leaving them controlled over the whole field of the incidence of taxation.

Now those are two conditions as I say which have to be realized in order to give a Canadian and British citizen in the Dominion the same degree of full self government that he would enjoy if he lived in the British Isles, and how are you going to bring that about? You can only bring it about by a deliberate measure, by an act of Parliament, and such an act of Parilament can never be brought into existence nor submitted to all these widely scattered communities until an Imperial convention has met to discuss the whole problem and to draft the scheme; and I say that in the light of all the past examples, that convention must not only represent all the countries concerned but it must represent all the parties in those different countries. I refer you back to the precedent of your own Dominion; I refer you back to the precedent of the South African Union. I venture to say that there is no single case in which a number of democracies have reconstructed their constitutions so as to get together for common purposes in which that change has been carried out by one party. It has invariably been carried out by agreement between two, and that is the reason why I don't hesitate to say no Imperial convention on this subject can succeed unless it represents not only all the countries concerned but all the parties concerned.

To Be Settled in Canada.

In the past the future of the British Commonwealth has perhaps mainly rested on the British Isles. Now I believe that after this war the whole future of the British Commonwealth will depend upon the manner in which this problem is faced and solved, but I don't believe it will primarily depend on the people of the British Isles. It must, from the nature of the case, depend upon the Dominions, and what the Dominions do must, from the nature of the case, depend upon Canada as not only the largest now, but destined in the future perhaps to be larger than all the others put together. It is here that this question will be settled and it is not necessary for me to argue that it will be settled freely. There is no kind nor sort of constraint which can be put on Canada from outside in this matter. It will be settled by the Canadian people for themselves, but not, gentlemen, for themselves only.

When you settle this question you will be settling not only the future and fate of this country, not only the future and fate of the Mother Country, not merely the whole future of the Commonwealth which includes a quarter of mankind, but in doing so you will be determining the whole course of history. I cannot think of any occasion in the history of the world when so great a responsibility has rested on a comparatively small people as that which I believe rests on Canada the moment this war is closed. One comes again to this moment, one must always come back to what those boys are doing at the front and to what is to come out of it, and one cannot but feel that whether what they do comes to fruition or is brought to naught depends upon what we do who remain and outlive them. When I think of that crushing responsibility which rests on us when the war is done I almost feel as if this is no subject for a convivial toast, the theme seems too great and the issues too momentous; it is almost in the spirit of a sacramental vow that I would ask you in drinking this toast to lift your glasses to your lips with the resolve that so far as in you lies you will carry to its issue the greatest project of freedom which the world has ever seen.

WINDSOR, N.S., HONORS INDUSTRY.

With considerable pomp and ceremony the plant of the Nova Scotia Underwear Company at Windsor, N.S., was put into operation on June 8. The Mayor of the town turned on the steam at one o'clock and set the wheels in motion, after which the assembled company, to the number of eighty or more, repaired to the third floor, and sat down to a luncheon served by the ladies of the Red Cross Society. Speeches of an optimistic character were delivered by several of the guests, who forecasted much prosperity for the town from the location of the industry there. The Underwear Company is occupying the cotton mill, which was closed down several years ago by the Dominion Textile Company.

ACHIEVEMENTS OF INDUSTRIAL RESEARCH*

By HARRISON E. HOWE
Assistant to President, Arthur D. Little, Limited, Montreal

INDUSTRIAL research works to counteract the influence of the man who first used the word "inexhaustible." It is a yoke mate with conservation. Research means careful, painstaking inquiry, and when applied to industry seeks to establish the best method for producing a given article; or, given the raw material, the problem becomes what can be made from it and derive the greatest profit. Research calls for highly trained specialists, and with a proper organization, proceeds to strengthen the whole industrial structure. It strives to prevent or minimize waste and makes by-product utilization an important feature.

To the extremely practical man, research often seems academic because he does not understand its method of work. Many of our most practical and important products have had their beginnings in purely academic and scientific research, which had no practical application as its goal at that time. The amount of light obtained from a kilowatt of electricity has been greatly increased and its quality improved by filling a bulb with a gas, instead of exhausting it nearly to a vacuum as formerly. The discovery was due to a piece of pure scientific research on the conductivity of gases, and yet, as a result, we are saving several millions of dollars per year. The fixation of atmospheric nitrogen, by which nitric acid can be made from air, and by means of which an Empire cut off from Chilean nitrate has been able to postpone the day of reckoning, goes back to a purely academic experiment in a test tube reported before the Royal Society in 1785.

Results Beyond the Field of Work.

To industrial research we owe most of our lauded achievements, and the results have been frequently felt economically beyond the limits of the field in which the work has been done. For example, the synthetic production of indigo, accomplished, after more than five years of work on the part of many chemists, and at a cost of more than $5,000,000, not only established a new industry but it released acres of land used for growing the natural dye for the production of food required by an ever increasing population.

Most of the "grain" or ethyl-alcohol used in the arts is made by fermentation from corn or molasses, which materials have food value. The production of this grade of alcohol from wood waste has been accomplished through research, and a demonstration plant is now producing 5,000 gallons per day. In this instance the accomplishment is both the utilization of waste and ultimately the conservation of food stuffs.

Perhaps a few examples of the value of research will be of interest:—

Aluminum was a museum curiosity in 1855, and cost $90 per pound at that time. In 1886 it had fallen to $12.00; the American Castner process reduced the price in 1889 to $4.00. Finally Hall in America and Heroult in Europe simultaneously worked out a process which now gives us an annual production of nearly 100,000,000 pounds and has made aluminum an everyday necessity.

Prior to the investigation of Frasch, Canadian and Ohio crude oils were worth about 14c. a barrel owing to their sulphur content, which until that time had made them highly objectionable, due to the nauseating fumes given off when they were burned. Frasch worked out a method for removing the sulphur, and the production of the Ohio fields jumped to 90,000 barrels a day with a value of $1 per barrel.

Chemists discovered that when glycerine is treated with nitric acid it becomes an explosive, but it is a difficult one to handle. As a result of research, Nobel discovered that the addition of kieselguhr, an earth, in the proper proportion gave what is called dynamite, which is comparatively safe to handle, and has made possible such great works as the Panama Canal and the subway transportation system of New York City.

The time and expense accompanying the old process of bleaching was saved when research worked out the process of making bleaching powder electrolytically from common salt.

The hydrogenation of oils is another notable chapter in industrial research for by that process the cheapest oils have been made suitable for soap making and the lowly cotton seed oil, an active competitor with lard and other fats in the culinary department.

We must not pass without referring to the excellent work done in the Dominion looking towards the utilization of cobalt of which more has been produced than the market required.

I may also mention the virtual completion of the many years work whereby flax fibre, which has been a nuisance to the farmer growing flax for seed, and which has been burned by him, is capable of becoming the basic material for the finest grades of paper.

Time is Essential.

Research may be carried on under any one of several plans, but in every instance it must have time in which to thoroughly prove every step it takes. It is not an instance where you can invest your money on Saturday and declare a dividend the following Monday. The problem having been chosen it must be carefully studied to determine the point of attack. Patents must be considered and the literature carefully searched to guide the investigator from the entanglements of litigation and to save needless duplication of work. Consideration must be given to such economical features as the supply of raw material, markets and tariff, transportation and competition. In the laboratory the theory and the reaction must be worked out; analyses and syntheses carried on and often accompanied with much experimenting as in the "Non flam" process of Perkin in the working out of which more than 10,000 trials with different fire-proofing compounds were made.

The step from the laboratory to the plant often involves problems as complex as the original research, and pertains to large scale apparatus, proper building materials, design of plant, the size units to be employed, etc. In this connection it will be useful to note the amount of research work done on the aniline and kindred synthetic dyes problem. To date it is in excess of 10,000 years if we define as one year the amount of work one man can do in that time, and yet consumers who have been unwilling to support a dye industry outside of Germany, complain because such an industry cannot, in the present emergency, be induced to assume a mushroom growth. Others who have not given sufficient study to the extreme complexity of dye manufacture, the comparatively small amount of material consumed and the economic features, suggest, as we recently saw in print, that now is the time for a dye industry in Canada.

* Address delivered at annual meeting of the Canadian Manufacturers Association, Hamilton, June 13th, 1916.

Results From Accidents.

Results in even the most expensive of industrial research frequently come from unexpected sources, and an accident has been the turning point in some instances. This is true in the case of synthetic indigo, where a chemist in checking over the work of another broke an expensive thermometer and said nothing about it. His work was completed by a third, who got the long sought for results. By checking back and quizzing the man who had broken the thermometer about the temperature at which his part of the work had been done, they discovered that the mercury from the thermometer was the final kink in the process upon which up to that time, over $5,000,000 had been spent.

Goodyear dropped a bit of gum mixed with sulphur on a hot stove, and the rubber industry has been the result.

Industrial research applies chemistry and other sciences. Science has been called "organized common sense," and we believe with Sir William Ramsey "that the country which is in advance in chemistry will also be foremost in wealth and general prosperity." How can we bring about this desirable result for ourselves? In a word, by co-operation. We must have the co-operation of industry, and not the attitude typified by one manufacturer in whose glass factory thousands of dollars worth of violet spoiled glass were occasionally thrown from the tanks, because an analysis of the manganese used was considered by the foreman as simply theoretical, and therefore, unnecessary. And a $10.00 analysis would have effected the saving. We need the co-operation of our schools and universities in training men for the work. These men must be well grounded in science and arts, must have imagination, initiative and patience. They must realize that theory, while essential, is not the whole story, and must know how to value the experience and opinion of strictly practical men.

We require co-operation among engineers and experts, each ready to do his special part, for which he is best fitted, and willing to share with others to whom portions of a problem may be assigned.

Convincing the Bankers.

Very generally we are confronted with the task of bringing the bankers to a scientific point of view. With us the discoverer of a process usually has to make an appeal to personal friends for funds with which to launch his enterprise. Any new process is likely to have a discouraging beginning, and it becomes increasingly difficult to hold the support of the backers. Meanwhile, the inventor is distracted from his work by the necessity of attending to financial matters with which he has had no experience. Gold bricks are much easier sold than the stock of a chemical industry for which a 20 per cent. return can be proven.

On the other hand, not having been trained to understand scientific processes, the man of finance must rely upon the opinion of disinterested experts if he would avoid disaster. Such an opinion should cover the soundness of the chemistry involved, the state of the art relating to the manufacture, the patent situation, the market, the competition, the cost of plant and the cost of production.

Secret processes may ordinarily be left to some one else. Consequently we should have capital properly advised by trained technical men, responsible for selecting the processes worthy of financial support. This idea is not new, being responsible for much of Germany's development, where the banks provide funds in accordance with the recommendation of their technical directors. One of the large German banks has more than a dozen scientific men with voting powers on the board of directors, and several of the most successful processes resulting from research have found their home in Continental Europe because there was no such reservoir of gold available in other countries.

We must not overlook the Government's important part in this plan of co-operation. There is the question of good patent laws, and, in some instances, of tariff. The Consular reports as to conditions and market in other countries, the assistance of the Government laboratories, and in some cases subsidies in some form to partly defray the expense of cost by experiments. To-day the most satisfactory source of optical glass and of some optical instruments necessary in science, art and war, is two factories where the Government subscribed liberally during the experimental stage, and is now a partner in highly profitable businesses. I refer to Carl Zeiss, and Schott & Genossen, of Jena, and Germany. In the United States we find abundant money ready for needed industries, but held back because the tariff is still a political issue.

Does Research Pay?

I hardly need ask the question, does research pay? Ask Germany. Ask any of the big corporations, who are spending from $100,000 to $500,000 annually on their laboratories. Ask General Electric, Eastman Kodak Company, du Pont, Parke Davis, Corn Products Company, the United States Steel Corporation, the United Shoe Machinery Company, the Bay State Lines, the Packers, etc.

But what about the man who cannot go into research on such a large scale, and who is not organized to support his own research laboratory? There are well organized and equipped staffs which will undertake his work and carry it to successful completion on a reasonable cost basis.

Some of the valuable results of research are not measured in such large figures as those to which we have referred. I know of one $15.00 analysis which has been the means of saving the client $50.00 per day from the time the report was made. A client was buying a boiler compound costing $1,000 per year. He is now effectively treating the boiled water for $100 per year, for the compound was found to be 95 per cent. water. Another client by having proper specifications saved $12,000 the first year on his wrapping paper. Another, a paper company, $100,000 on the alum. Occasionally we find a man who knows so much about his business that no one can possibly help him. We knew one such who paid $1.50 per gallon for lubricating oil, while another, who had the proper specification on which to buy, obtained it at 27 cents per gallon. One man buys a special grease, on specification, for 5½ cents, although his superintendent positively declared he could not run the mill on anything but a grease which he had been buying under a fancy name at 37 cents. The mill is still running, and yet some think chemistry all theory.

To summarize, industrial research strives to economize and to develop. It improves the process, the product and the profits. It seeks new raw materials and satisfactory substitutes for old ones. It endeavors to prevent wastes, to utilize by-products, and to effect lubrication and fuel economies. It standardizes purchases, works out usable specifications, devises new uses for by-products and leads to new industries. It finds work to do from the power plant to the shipping room.

While various plans leading to more industrial research work in Canada have been under consideration, Lord Shaughnessy has put into operation a plan for securing immediate action along many lines, some of which are now, in consequence, already under investigation. It is a plan which provides and contemplates the close future co-operation with whatever agencies for the furtherance of industrial research the government, the universities, the corporations or individuals may later on develop. As a member of the organization which has been entrusted with this work, I want to assure

you that we are here for co-operation, and to assist in the co-ordination of such plans and equipment as may have already been made available for industrial research.

Presuming that a Central Board such as several have suggested will be established, to consider research problems and assign them for solution, I wish to assure you of our desire to co-operate not only by undertaking those problems which we are qualified to solve, but also by arranging to assist the board in determining who is best qualified, to work on other investigations.

Gentlemen, you are considering industrial research at a time when its application has been amply proven, and when the time seems ripe for real co-operation. To quote Professor Duncan, "During the next five years the small manufacturer who is swept out of existence will often wonder why. He will ascribe it to the economy of large scale operations, or business intrigues, or what not, never knowing that his disaster was due to the application of pure science that the trust organizations and large manufacturers are already beginning to appreciate."

When asked can we be successful with industrial research in this hemisphere. I am reminded of the jingle about Darius Green and his flying machine written when flying was considered impossible. The philosophy of Darius ran something like this:—

"The birds can fly, and why can't I?
Is the twittering phoebe smarter than we be?"

It was sometime later when some newspaper man offered to eat Wright's aeroplane if it ever flew, but there is no record of their having lived up to their end of the bargain. Research has already achieved much on this continent, but let us not rest content with discussion lest research become as Mark Twain described the weather when he said "We talk a lot about it but nothing is done." This is the time for action and co-operation, and I believe with Dr. Whitney that "industrial research is a national duty."

PRAIRIE PROVINCES BRANCH.

Annual Meeting was held in Winnipeg on May 30.

A larger attendance than was recorded at any previous meeting of the Winnipeg Branch (now re-organized and merged in the Prairie Provinces Branch of the C. M. A.), was present at the annual meeting held in Winnipeg, on May 30. The members present displayed a keen and active interest in the subjects discussed and showed appreciation of the efforts that had been put forth to place the Association on a more permanent basis in the prairie provinces.

The chair was occupied by W. R. Ingram, the Branch chairman, who presented an excellent explanatory report of the various activities of the organization during the year. He referred in detail to what has been accomplished by the transportation committee in the way of securing a reduction of storage charges at Fort William; remedying disabilities arising from the heated car release order of the Board of Railway Commissioners, etc. He dealt with the important work of the legislation committee respecting the factory act, the boiler act, the workmen's compensation act and the fair wage act.

An explanation was given of the changes in the secretaryship, together with a reference to the formation of the Prairie Provinces Branch to look after the needs of Western manufacturers. Thirty-two new firms became members during the year, thirty resigned, and the net membership was 308.

As the Prairie Provinces Branch was accorded the privilege of nominating the second vice-president of the National Association, Mr. Ingram put in the name of W. J. Bulman for that office.



W. J. BULMAN
Bulman Bros., Limited, Winnipeg
Nominee of the Prairie Provinces Branch for Second Vice-President C. M. A.

W. S. Fallis presented the report of the nominating committee and on motion the report was adopted. The following are the principal officers of the branch for 1916-1917:

Vice-president, L. C. McIntyre; chairman, W. R. Ingram; vice-chairman, D. J. Dyson.

Executive Committee, H. B. Gordon, John Brockest, G. W. Markle, W. T. Kennedy, J. M. Carruthers, M. F. Christie, T. Boyd, W. G. Fraser, A. B. Stovel, F. J. Baker, L. C. Barrett, L. R. Baker.

Executive Council, W. S. Fallis, W. A. Matheson, F. W. Adams, T. R. Deacon, L. A. Race (Brandon).

Chairmen of Committees—Transportation, M. F. Christie; tariff, F. J. Baker; membership, H. R. Eade; legislative, A. B. Stovel; war purchaser, T. R. Deacon.



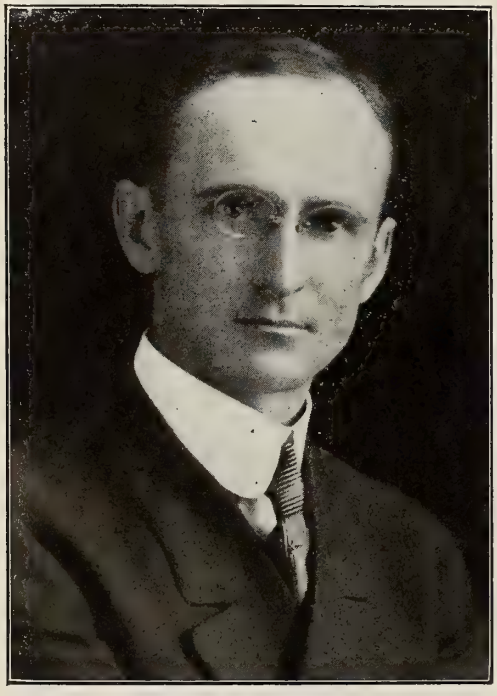
G. E. CARPENTER
Secretary, Prairie Provinces Branch, C. M. A.

REPORT OF THE GENERAL SECRETARY

Mr. President and Gentlemen:

Owing to the unavoidable absence of our Treasurer, Mr. Booth, whose state of health does not permit him to be with us to-day, I am going to preface my own report with a few brief references to the annual financial statement, copies of which I am glad to place before you.

As will be observed from the balance sheet, we have accumulated during the year a surplus of $4,922.59, and carried forward a total surplus of $50,168.49. Our principal liability is or fees paid in advance and unearned—$20,942.00. This liability will, of course be liquidated by services rendered, but as it costs money to render that service the inclusion of the item in the liability column is eminently proper. Our cash



G. M. MURRAY
General Secretary, Canadian Manufacturers Association.

assets show a shrinkage for the year of roughly $5,300; on the other hand our investments in debentures have been increased $7,500. The reserve for bad debts, $1,000 is almost four times what it was actually found necessary to write off this past year. On furniture and fittings, the usual depreciation of 5 per cent. has been charged, and our stocks of stationery and supplies are not carried as an asset at all. The balance shown, therefore, has been computed on a very conservative basis.

Our revenues are ordinarily derived from three sources only—membership fees, INDUSTRIAL CANADA, and interest on our investments. From INDUSTRIAL CANADA the profit last year was not quite so large as in former years, but considering the general condition of business it was highly satisfactory, being $5,518.66 for the 12 months, or an average net profit of a little over $450 per month. In next year's statement INDUSTRIAL CANADA will probably not show so well, owing to the phenomenal rise in the price of paper, which, commencing May 1st, has added practically $100 per month to its cost of publication. That shrinkage, however, will be more than offset by the profits from the new edition of the Canadian Trade Index, that will be off the press very soon. The revenue from fees has been well maintained despite adverse conditions, and could doubtless be largely added to now that confidence has been restored.

Our expense account, totalling $54,755.55, is about $4,000 less than for 1914-15, notwithstanding salary increases that went into effect on January 1st. The only item of extraordinary expenditure during the year was $3,166.49 for counsel fees in connection with the test cases on company law, taken before the Privy Council. A new series of cases that have now to be brought under the courts of Saskatchewan will probably involve the expenditure of a similar amount the coming year.

On the whole our finances are in a very satisfactory condition, providing we adhere to our present programme, and avoid adding to our fixed charges until there is sufficient revenue in sight to meet them. Reference will be made in the report of the Executive Committee on certain commitments that have recently been entered into, also to others that are under consideration. If these are gone ahead with they cannot be met out of the revenue we now enjoy, and as it would be unwise to draw upon our reserves to finance undertakings of a permanent nature, it behooves us to devise ways and means of securing for ourselves a larger income.

Canadian Trade Index.

The compilation of material for the new edition of the Canadian Trade Index was commenced last fall. Although it involved a large amount of clerical work it was handled throughout with just the regular staff, each member devoting to it all his or her spare time. About 7,000 manufacturers in all are listed in it. In former editions different sizes of type were used to distinguish members from non-members; in the edition now coming out this differentiation is being done away with. The classification has been considerably extended, there being nearly 400 new headings. The miscellaneous commercial information inserted in the front of the last edition will be almost all omitted; in its place there will be restored the alphabetical list of Canadian manufacturers, with a brief description of each firm's business, its branches, agencies, brands and cable codes. This feature will be greatly appreciated by users of the book in foreign countries, to whose representations its restoration is really due. It will add at least 200 pages to the book, and increase the cost of publication about $1,500, but we have always kept in mind the fact that it was issued primarily for service, the question of revenue being a secondary consideration, and when we found ourselves in receipt of advertising contracts totalling $14,200, as against only $11,900 for the previous edition, we decided that we could not spend the extra profit more advantageously than by putting a portion of it back into the book in an effort to add to its value.

While nominally the new index will sell for $5.00 per copy, it will be distributed free in quarters where its use will likely result in increased business for Canadian manufacturers. Members, of course, will receive it free as one of the privileges of membership.

Departments.

All departments at Head Office have experienced a busy year—some exceptionally so. In the case of the Transportation, Tariff and Legal Departments, reports will be presented from supervising committees, so that comment from me at this stage is unnecessary. One thing only I desire to point out, and that is that none of these reports in any way reflects the amount of service given to members individually, or the time or work involved in furnishing that service. For example, in the matter of freight claims alone there have passed through the hands of our Transportation Department this year cases totalling $14,832.93, most of which came to us only after members had tried to effect a settlement and failed. The Tariff Department has similarly handled with success numerous applications for refunds of duty that members referred to us only after they had taken their cases up direct with the Customs authorities and been refused. Claims for which we actually secured settlement during the year amounted to $5,338.71.

The work of the Insurance Department has been exclusively along the line of individual service. It reports to me monthly on the business done, with the names of the members to whom it has been able to render assistance and the kind of assistance rendered in each case. I am pleased to state that the number of those who make use of its service is increasing. Letters of appreciation that reach me from time to time convince me that it is doing useful work, and that scores of our members who have never employed it would find it to their advantage to do so.

The Commercial Intelligence Department, besides assuming responsibility for the Trade Index, has had charge of the distribution of foreign trade enquiries and that of translation and commercial report services. For well over a year now it has been deluged with requests for all sorts of commercial information—received from manufacturers who have had to adjust themselves to new conditions created by the war. Like the Insurance Department, it too, is one that is given over almost wholly to individual service.

Industrial Canada.

Industrial Canada has already been referred to from the financial standpoint; I would like to add a few words regarding its editorial management. Among the added duties that have fallen to my lot owing to enlistments from the staff, has been the preparation of the editorial matter each month, commencing December last. The Executive Committee very kindly gave me a free hand to deal with such subjects as I liked and in whatever manner commended itself to my judgment. I warned them that I intended to be vigorous, and they encouraged me to be so. Where the policies of governments or the actions of Government officials have seemed to me to merit the approval of our Association, I have not hesitated to express that approval in full measure; on the other hand I have been just as free to express disapproval where I thought that such a course would properly reflect the sentiment of our members.

For this I have sometimes been criticised, not on the ground that my statements were misleading or my inferences unjustified, but because the issues dealt with were controversial, and, therefore of a kind to be avoided by the official organ of an association that was essentially non-political.

In justification of the course I have pursued I can only offer it as my personal opinion that when it comes to a question of national business, the Canadian Manufacturers Association, which prides itself on being a national organization of business men, can ill afford to remain silent. Regardless of whether that question is the subject of political controversy or not, it appeals to me as fundamentally sound that if there is a well-defined concensus of opinion among manufacturers in regard to it, that opinion should be made known. A policy of strict neutrality may temporarily spare us displeasure of those whose views we would oppose, but it is hardly likely to increase the respect in which we are held by either side if we offer no opinions upon a matter that vitally concerns us. On the other hand, a policy of fearlessly criticising or whole-heartedly commending the actions of any Government whatever its politics may be, must in the long run cause our Association to be held in wholesome respect, as a factor to be reckoned with. I do not share the fear of some members that we may thereby create for ourselves an antagonism that will detract from the warmth of our reception when we have proposals to submit. A manifestation of strength will, I believe, enure to our advantage under any circumstances; conversely a manifestation of timidity, or of unformed opinion, will only invite for our suggestions the scant consideration they deserve.

As stated above, these are only my personal views, and if the editorial policy I have pursued, based upon these views has failed to merit your approval, I shall be pleased to receive instructions that will enable me more intelligently to carry out your wishes.

New Work.

In this connection there is another observation I would like to make. While I have gladly assumed the duty of contributing the editorials for Industrial Canada, there is a limit to the amount of work which I or any other member of the staff can properly attend to. It should, I feel, be the aim of the Association rather to do a few things, and do them thoroughly than to attempt many things and finish none of them. During the past year conditions of an unusual character have given rise to a variety of problems, in all of which it was desirable for us to interest ourselves, and upon all of which we have done something, or at least expressed some view.

For example, there has been the returned soldier problem. It will at once commend itself to you as sound that our Association should place on record its views on such a subject, and at least volunteer its co-operation in finding employment for those who have risked their lives to serve their King and country. It would probably be regarded as beyond our province to administer bureaus that would better enable this object to be attained, but in volunteering to co-operate with Government Commissions, how far should we go? And how far do we commit ourselves in placing the services of our staff at the disposal of these Commissions? Doubtless you will say that our regular work should not be neglected, that we should give to such matters only what time we can spare. But in war time what is our regular work? Or, to put it in another way, may not our regular work be of far less importance to us as an organization, to the country as a whole, than the emergency problems that keep demanding our attention?

There is, perhaps, nothing that means more to Canada at the present time that the negotiation of preferential tariffs within the Empire and reciprocal tariffs among the Allies. Under such an arrangement our industrial future would be absolutely assured; without it we may succeed, but only by overcoming tremendous difficulties. To arouse public sentiment in support of such a proposal, to collect the material that would make the arguments convincing, would be as useful a work as our Association could possibly engage in. But we cannot begin to do justice to it and at the same time devote our energies to National Registration, to Organization for Export Trade, to Industrial Research, to a Continuation of the Made-in-Canada Campaign, to the Mobilization of our

Resources for the Production of Munitions and the dozen and one other problems of almost equal importance that have been clamoring for our attention.

The sudden precipitation of so much work of this kind has made the past year a trying one for your staff, and possibly the meagre progress made with such matters has made it an unsatisfactory one for the membership. If there is any feeling of regret on the latter score I know it will be forgotten when I state that we have been working under the same disadvantages that you have all probably experienced with your own office forces. Our Western secretary, Colonel Poussette, went overseas with the Second Expeditionary Force, in charge of the Ammunition Park. Since then we have had three different secretaries in Winnipeg, the first two being temporary appointments only. Captain McIntosh, secretary of the Toronto Branch, is now at the front with the 79th Battalion. Major Stirrett, editor of INDUSTRIAL CANADA, is with the 126th Battalion at Niagara. Mr. Meldrum, Montreal secretary, was taken from us by the War Service Department of the Canadian Pacific Railway Company, and sent to London. His successor, Mr. Campbell, is now in France as secretary of the Trade Commission recently appointed by the Minister of Trade and Commerce. Within the past month Mr. Scully has left us, but before he resigned a considerable portion of his time was devoted to military instruction. For the handling of your work, therefore, we have had the services of only a remnant of the old staff, and if there have been evidences of shortcomings I am sure you will forgive them under the circumstances.

Appointments that have recently been made, coupled with others that will soon be made, some of a permanent, others of a temporary character, should go far in the direction of enabling us to recover lost ground, and I have little doubt that things will shortly be in smooth running order again.

In concluding this report I desire on behalf of the staff to express the warm appreciation we all feel for the manner in which our efforts have been seconded by the members who have served so faithfully upon committees. It is as much to their wise counsel and loyal support as to anything we have done that the success of the past year is due. Our relations with our employers have been throughout most cordial, and in the expectation of a continuance of such happy auspices we look forward to the coming year with confidence and the pledge of our best services.

Respectfully submitted,

G. M. MURRAY,
Secretary.

The reading of the report was received with applause and, on motion of Mr. G. A. Slater and Mr. H. J. Waddie, the report was adopted.

AUDITOR'S REPORT

BALANCE SHEET, 30th APRIL, 1916.

30th April, 1915.			30th April, 1916.
	LIABILITIES.		
$20,931 26	Fees paid in advance and unearned	20,942 09	
2,444 66	Accounts payable	1,463 82	
$23,375 92			$22,405 91
2,000 00	Reserve for depreciation, furniture and fittings		2,375 00
45,245 90	Surplus—		
	30th April, 1915, Balance..	$45,245 90	
	30th April, 1916, Surplus revenue for 12 months..	4,922 59	
			50,168 49
$70,621 82			$74,949 40
	ASSETS.		
$11,575 87	Cash on hand and in bank..	$6,277 51	
40,894 56	Investments at cost—Schedule "C"	48,394 51	
641 27	Interest accrued on above...	1,033 48	
$53,111 70			$55,705 50
8,670 98	Accounts receivable	$7,425 60	
646 74	Fees accrued and due	247 90	
$9,317 72		$7,673 50	
1,000 00	Less reserve for bad debts..	1,000 00	
$8,317 72			6,673 50
	Rent paid in advance, etc...	$619 40	
	Trade Index, 1916, advance payments	2,017 90	
850 00	Advances *re* Workmen's Compensation Act	1,402 95	
1,077 16	Made-in-Canada campaign..	1,060 66	
			5,100 91
7,265 24	Furniture and fittings		7,469 49
$70,621 82			$74,949 40

Audited and found correct.

(Sgd.) WILTON C. EDDIS & SONS,
Chartered Accountants.

REVENUE ACCOUNT.

For 12 Months ending April 30th, 1916.

1916. April 30th.			
To Expense—Schedule "A"		$54,755 55	
" Bad debts		273 64	
" Depreciation, furniture		375 00	
" Extra Provincial Corporations Test Case		3,166 49	
By Membership fees			$55,455 28
" Interest			2,447 92
" INDUSTRIAL CANADA—Schedule "B"..			5,518 66
" Trade Index, 1913			71 41
To Surplus revenue for 12 months carried to Balance Sheet		4,922 59	
		$63,493 27	$63,493 27

SCHEDULE "A."

EXPENSE ACCOUNT.

For 12 Months ending April 30th, 1916.

Annual Meeting, 1915		$1,058 05
Branches—		
Hamilton	$544 20	
Manitoba	4 00	
Maritime Provinces	339 98	
Montreal	4,967 17	
Quebec	71 03	
Toronto	1,596 77	
Winnipeg office	4,021 58	
		11,544 73
Certificates		231 46
Departments—		
Insurance		2,000 00
Legal		2,620 47
Tariff		7,061 20
Transportation		11,804 82
Exchange		91 96
Postage		737 33
Printing and stationery		532 50
Rent and light		1,117 96
Salaries		14,054 05
Sections		368 91
Sundries		456 99
Telegraph and telephone		431 27
Translations		177 60
Travelling		466 25
		$54,755 55

SCHEDULE "B."

INDUSTRIAL CANADA.

Statement showing Income and Expenditure for 12 Months ending 30th April, 1916.

INCOME.

Advertising—Display	$22,790 34
Advertising—Buyers' Guide	1,519 61
Sale of copies	146 25
	$24,456 20

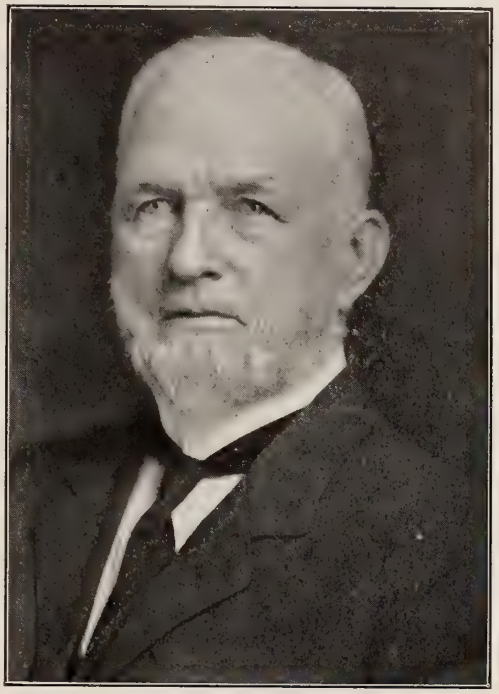
EXPENDITURE.

Electros	$371 00
Special literary matter	283 65
Postage and distribution	1,116 33
Printing and stationery	$9,345 18
Rent and light	1,100 04
Salaries	6,004 37
Telegraph and telephone	58 77
Travelling	210 39
INDUSTRIAL CANADA Prizes	380 00
Sundries	67 81
	$18,937 54
Profit for 12 months	5,518 66
	$24,456 20

SCHEDULE "C."

INVESTMENTS.

	Par Value.	Cost.	Rate of Interest.	Due Date.
City of Toronto Bonds	$4,866 67	$4,193 12	3½%	1 July, 1944
City of Hamilton Bonds	4,000 00	3,932 00	4%	1 Sept., 1920



GEORGE BOOTH

Booth Coulter Copper and Brass Co., Limited, Toronto

Re-elected Treasurer, 1916-17, C.M.A.

	Par Value.	Cost.	Rate of Interest.	Due Date.
City of Stratford Bonds	10,000 00	10,400 00	4½%	1 Jan., 1941
Riordon Pulp and Paper	5,000 00	4,950 00	6%	30 June, 1942
City of Toronto Bonds	6,326 66	5,520 64	4%	1 July, 1948
City of Brandon	10,000 00	9,881 00	5%	1 Oct., 1932
City of Toronto Bonds	5,000 00	4,675 00	4½%	1 July, 1925
Dom. of Canada War Loan	5,000 00	4,842 75	5%	1 Dec., 1925
		$48,394 51		

Toronto, 30th May, 1916.

The President and Members,
Canadian Manufacturers' Association, Inc.,
Toronto, Ont.

Gentlemen:

We have audited the Books and Accounts of the Association for the twelve months ending 30th April, 1916, and annexed hereto please find Balance Sheet, Revenue Account, etc., duly certified to by us.

Yours faithfully,

(Sgd.) WILTON C. EDDIS & SONS,

Following the reading of the financial statement, which, in the absence of the Treasurer, was presented by the Secretary. President Sherrard said, "This is the first convention which I can remember at which Mr. Booth did not present his own report. Perhaps there is no man in the Association who is so much loved and respected as Mr. Booth. His absence to-day is due to an illness that is of long standing and I hope that the adoption of the report will be accompanied by a resolution of good wishes to Mr. Booth."

REPORT OF THE EXECUTIVE COMMITTEE

YOUR Executive Committee have pleasure in submitting the following report upon matters that have engaged their attention during the year just closed.

The business and financial supervision of the Association's affairs during a period characterized by great uncertainty has been a task of no mean responsibility. On the one hand, the extraordinary conditions brought about by the war gave rise to numerous calls for the improvement and extension of our service, calls which could only be met by a larger expenditure of money. On the other hand, the steadily increasing number of resignations, due to causes it was impossible to control, suggested the wisdom of conserving our resources, so as to be better able to weather the storm that seemed to be impending. Had the regular staff been available throughout the year, the situation might have been met by asking each member thereof to assume a proportionate amount of new duty. Our Association, however, like every other business concern, has seen its staff weakened by enlistments and other causes, and the necessity of employing substitute help has naturally increased the difficulties of the situation, both from the financial standpoint and from the standpoint of effective service.

If the service rendered has been in any way subject to criticism, your Committee can only express their regrets, coupled with the assurance that they have endeavored to see that former standards were maintained so far as it was practicable to do so. In the matter of finances, far from having any cause for regret, your Committee are pleased to be able to show a surplus on the year's business of $4,922.59.

The total revenue for 1915-16 was $63,493.27, as compared with $65,165.33 for the year previous. A shrinkage of $948.88 in the net earnings from *Industrial Canada* accounts for the greater part of the decrease. The revenue available from fees this year was $841.31 less than for last year, though as a matter of fact the actual cash collections from fees showed a gain of $780, a result that is the more gratifying because of its unexpectedness. Our total expense account for the year just closed was only $54,755.55, as compared with $58,975.31 for the year previous, a saving of $4,219.76. For this saving your committee do not attempt to take any particular credit to themselves, for it resulted almost wholly from their failure to arrange for a continuation of the services of the Legal Department. The disbursements under that heading for 1914-15 were $6,457.13; this year they were only $2,620.47. It follows, therefore, that but for a contingency which in some respects can only be regarded as unfortunate, it would have been necessary to report a small deficit on the year's transactions.

Looking to the future, it is only fair to point out that unless our revenues can be considerably increased, the deficit we have this year happily escaped will almost certainly become an actuality a year hence. The immediate resumption of the services of the Legal Department, on the plans now in mind, will call for at least $2,000 per annum. Salary increases totalling $3,800 were recently authorized, of which $3,200 were made effective from January 1st, and $600 from May 1st. Financial commitments in connection with the enlargement of our Winnipeg office will easily account for another $3,000 per annum. If a permanent office is to be opened in Vancouver, to which proposal reference will presently be made, our expenses will be increased from $3,500 to $4,000 more.

As an offset against these increases in our expenditure, the charge for salaries will be subject to some small deduction, first because the clerical staff at head office will soon be reduced by two, and second because the half-pay allowance for one year voted to two members of the staff who enlisted will expire in December next. But allowing for these, and deducting that proportion of the salary increases that figured in this year's statement, it is apparent that for the coming year, unless we are to draw upon our reserves, we should provide ourselves with at least $6,000 more revenue to see through undertakings to which we are definitely committed. If in addition the Vancouver programme is to be carried out, the extra revenue needed will be $10,000.

To accomplish this purpose, the means that most readily suggest themselves are, either to secure a large number of new members, or to raise the membership fee. The former course would naturally be the one to try first, and it is perhaps a question whether its possibilities should not be completely exhausted before having recourse to the alternative. In any event the situation must receive serious consideration. Fortunately, our reserves are such that we need not commit ourselves hastily to any policy, for the surplus of the past year alone, coupled with the incidental profit that the edition of the Canadian Trade Index now coming out will yield, should see us through another year without much difficulty.

Investment Account.

Since our last annual meeting a small lot of $2,000 City of London debentures matured and this amount, together with a portion of the surplus cash on hand after the heavy collections of August and September last, was used to purchase $5,000 City of Toronto 4½ per cent. debentures, maturing 1925, at a price to yield 5.375 per cent. interest. Later on your Committee also purchased $5,000 Dominion of Canada 5 per cent. War Loan debentures, maturing 1925, at a price to yield 5.48 per cent. interest. With these additions the investment account now stands at $48,394.51, as against $40,894.56 a year ago.

Accounts Receivable.

The amount of accounts receivable, shown in our statement of assets as $7,425.60, is not unusually large; in fact it is $1,200 less than the amount shown in the statement for 1914-15. It is made up very largely of amounts owing from advertisers in *Industrial Canada*, who, for the most part are billed and pay their accounts quarterly. The only amounts contributing to the total shown which call for special mention are $553 due from the Export Association of Canada, Ltd., for expenses incurred in assisting them to organize, $210 due from the Packers' Association for advances made in connection with an investigation they decided to undertake, and $683 due from the Safety Associations, this latter amount representing the balance still unpaid after $922 of charges out of a total of $1,605 had been satisfactorily adjusted.

With the possible exception of a small portion of the balance due from the Safety Associations, these accounts are all perfectly good. The reserve for bad debts shown in the balance sheet both for this year and for last year is $1,000; the amount that actually had to be written off this year was only $273.64.

In order to complete this portion of their report, your Committee feel that they should make reference to two other items of which no account has been taken in the financial statement. When the operations of the Graphic Arts Section were first commenced, advances were made to that section under a guarantee of repayment. The abnormal conditions prevailing since the outbreak of the war caused the section to postpone operations till a more opportune time. Meanwhile advances made in their behalf, totalling $662, have been carried as an expense, though as a matter of fact they are a contingent asset.

The other item of which mention should be made is a contingent liability that was gladly assumed by the Association, when writs in an action for libel were issued against the Secretary and the Editor of *Industrial Canada*, for an article which they published resenting attacks on the Made-in-Canada campaign. The action in question has never been brought to trial though it has been pending for well on to a year.

Winnipeg Office.

Following the enlistment of Col. G. F. C. Poussette, the secretary in charge of the Winnipeg office, for overseas service, in November 1914, our service in the West was for a long time more or less disorganized. For over six months such work as was done was performed by members of the Manitoba Executive, who volunteered their time week about. This plan proving unsatisfactory, in August last a secretary was engaged in a temporary capacity. Shortly after the first of the year, he resigned, and another temporary appointment was made.

Meanwhile, a spirit of restlessness was being manifested among our Western members, partly because of the failure of the Association to provide them with the services to which they believed themselves entitled, and partly because of their belief that the Association was neglecting a valuable opportunity to make itself the dominant commercial organization of the West.

Following a visit of the Second Vice-President and the Secretary to Winnipeg last month, when the whole situation was thoroughly canvassed with the Manitoba Executive, the conclusion was reached that it was not only desirable in the interests of Western members, but necessary in the interests of the entire organization, that the service from Winnipeg should be strengthened and improved.

Having in mind the problems peculiar to the West, it was unanimously agreed that the one outstanding need was for a service in transportation matters. In order that such a service might be afforded, by an officer in whom the West would have confidence, your Committee on the advice of the Manitoba Executive, decided to engage Mr. G. E. Carpenter, Manager of the Shippers Section of the Winnipeg Board of Trade. Mr. Carpenter entered the employ of the Association on May 15th, on which date we moved to new quarters better adapted for meeting purposes and for the work in hand. Mr. Carpenter's appointment has been received with decided favor by our members all through the West, to whom he had long been known because of his excellent record with the Winnipeg Board of Trade. That he leaves that organization with the best of feeling is shown by the fact that on our invitation they will freely utilize Mr. Carpenter's services in all transportation matters which do not conflict with our general lines of policy. It is the confident expectation of the Manitoba Executive that the larger field of usefulness that will open up for the Association in the West by reason of the service now afforded will not only result in a substantial increase in membership, but will at the same time place our association in the forefront of commercial organization work in that territory.

Vancouver Office.

In the opinion of your Committee, what is reported as having been done for our members in the Middle West should, on a less pretentious scale, perhaps, be also done for our members on the Pacific Coast.

In no part of Canada are our members so far removed from the centre of the Association's activity as those whose plants are located in British Columbia. Their remoteness from Head Office stands as a perpetual obstacle in the way of their utilizing the Association to the extent that their fellow members in the East are able to utilize it. For that reason, we owe it to them to give them, if possible, some kind of service at their very door. Were we to do so, we would greatly strengthen our hold upon those who have been loyal to us in the past. At the present time we need all the friends we can secure in British Columbia. The rival organization of manufacturers, started in that Province some two years ago, has had a flourishing career; its membership has grown from a mere handful to over two hundred, while ours has fallen from one hundred to sixty. Indications, however, now point to the probability that the local organization has reached, if it has not passed, the zenith of its power and influence. Having no outside connections, its operations are necessarily circumscribed and incapable of much expansion. Should our Association decide to commence active operations there, its field of usefulness would not be so restricted, for besides furnishing a local service equal to the best that the provincial organization is supplying, it would be able to offer, in addition, all the advantages of our specialized departments and our close relations with Ottawa officialdom and railway headquarters.

There are good reasons for believing that after the war British Columbia will experience an era of considerable industrial development, particularly in view of the likelihood of largely increased trade between Canada and Siberia. With that probability in mind, it would seem to be good sound business for our Association to lay plans for making itself strong in British Columbia, and if this meeting approves, your Committee will lose no time in dealing with the matter and will open an office in Vancouver at an early date, putting a secretary in charge who will give the Association his entire time, preferably one who has had experience in transportation work, and who, with that qualification, will be able to give our members a service they will appreciate.

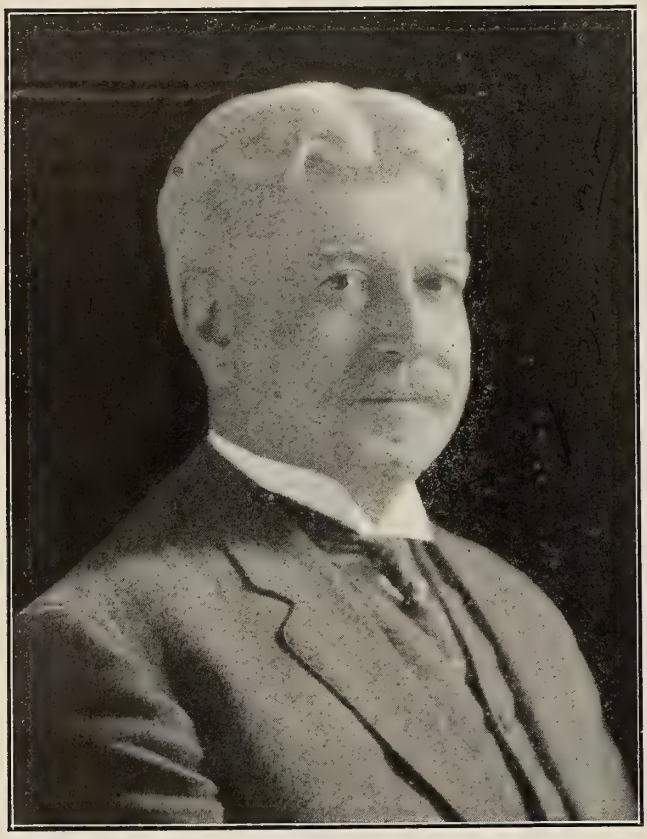
Bureau of Commercial Economics.

At this evening's meeting there will be a lecture and demonstration on "Business Applications of Motography." This feature follows as a result of some study given by your Committee to the operations of an institution known as the Bureau of Commercial Economics, Washington.

A perusal of the literature issued by the Bureau shows it to be a broad-based and thoroughly organized movement to disseminate information regarding United States industries, United States resources, and United States institutions, by means of moving pictures. The fact that its film service was being advertised as available for Canada, naturally suggested that some steps should be taken by Canadian manufacturers for their own protection. Growing out of this idea, it appeared to your Committee to be not only feasible, but highly desirable, to arrange for a continuation of the Made-in-Canada campaign, utilizing moving pictures as a means of securing the public's attention, and to employ the same machinery for advertising Canadian products and Canadian resources abroad, in a two-fold effort to stimulate a demand for our goods in export markets and to attract a desirable class of immigration after the war is over.

In the latter connection representations have already been made to the Minister of Trade and Commerce and to the Economic and Development Commission with a view to having some kind of foreign service supplied. The matter is known to be under favorable consideration at Ottawa. If action is taken, your Committee feel that all Government Departments should co-operate in a determination to secure and place on circuit a collection of films that will not only be a credit to Canada, but that will adequately reflect our industrial activities and our natural resources in all their phases.

Meanwhile we are informed that efforts are being made by the Bureau of Commercial Economics to obtain agricultural and other films from our Dominion and Provincial Governments, with the promise that they will be included in the



E. G. HENDERSON
Canadian Salt Co., Limited, Windsor
Who presented the report of the Executive Committee.

Bureau's syllabus of studies and be made available for display in foreign countries. For our Governments to meet the Bureau in this respect would, we feel, be a mistake so long as there is any possibility of uniting all Canadian forces in one plan to supply a comprehensive film service, that will be operated under strictly Canadian auspices, free from any danger of being subordinated to United States interests.

This method of national advertising offers wonderful possibilities, a full appreciation of which can best be attained from a practical demonstration. For this reason it is to be hoped that this evening's session will be well attended.

Industrial Research.

Your Committee have been obliged to give a good deal of time during the year to the consideration of plans for providing Canada with facilities to engage in the work of industrial research. The stoppage from abroad of many classes of imports, necessary to manufacturing processes, has focussed attention on the problem of producing these materials in Canada. Not only that, but the necessity for making Canada thoroughly efficient from a producing standpoint, in order that she may take full advantage of the export markets that will be available when the war is over, has similarly focussed attention on the problem of utilizing to the fullest degree the resources we possess.

Canadians have long known in a general way how important has been the part played by industrial research in Germany's campaign for the extension of her foreign trade. From nearer at hand they have had both the illustration and the inspiration of the Mellon Institute of Pittsburg to demonstrate the value of industrial efficiency and to quicken their desire for its realization.

That Canadians are beginning to approach the problem in a genuine desire to accomplish something is evidenced by the fact that at the present time there are four important yet entirely separate movements on foot to initiate research work on a more or less extensive scale. Yielding to repeated representations made on behalf of this Association, the Minister of Trade and Commerce has evolved a plan that provides for the appointment of a committee of the Cabinet to take this work under its direction, utilizing as far as practicable the equipment possessed by university laboratories. The Economic and Development Commission, presided over by Senator Lougheed, is under instructions by the Order-in-Council which created it, to suggest plans that will ensure adequate facilities for research. While these plans cannot be forecasted with any degree of certainty, the indications are that there will be a recommendation for the appointment of a commission, comparable in its scope with the Grain Commission, to receive the suggestions of those who have problems to solve and to assign those problems to the institutions, whether public or private, best equipped to handle them. The Economic and Development Commission are not likely to be at all modest in their demands for money. If their plans, so far as we have been able to gather them, are adopted, the Government will be asked to provide an annual sum that will take care of any programme that is likely to arise. The Commission, of course, would carry on this work entirely free from political influence, engaging for the most part in problems whose solutions would be public property, but at the same time not neglecting the problem of the individual manufacturer, who would naturally pay for the service rendered.

Since the first of the year the Canadian Pacific Railway Company has persuaded a Boston firm of research chemists to open an office and to equip a laboratory in Canada, guaranteeing them a revenue of $100,000 a year as a protection against loss. It is highly significant, as indicating the need in Canada for such an institution, that during the first few weeks its doors were opened enough work was secured to relieve the Canadian Pacific Railway Company from all financial responsibility.

Still more recently the Royal Canadian Institute has entered the field with a plan for the establishment of a Bureau of Research. It contemplates operating in quite a small way at first, preferring to develop as the real needs of the country become more apparent and as the fruits of its work bring their own reward in the form of subscriptions and endowments from those who have benefited.

This whole question was regarded by your Committee as one of sufficient importance to justify treatment as a special item on the programme, and it has accordingly been set down for further discussion to-morrow afternoon.

Employment for Returned Soldiers.

The governmental machinery that has been provided for handling the returned soldier problem consists in the first place of a Federal commission known as the Military Hospitals Commission and a series of Provincial commissions known for the most part as Soldiers' Aid Commissions. The basis of co-operation between the Federal and the Provincial commissions is as follows:

(1) The Military Hospitals Commission undertakes to assist and advise Provincial or local committees with respect to the best methods to be adopted to attain the objects in view.

(2) All expenditures necessary in connection with the organization and administration of Provincial or purely local committees are to be borne by the Provincial or local authorities, or by voluntary contributions.

(3) Each Province, working through its central committee, assumes the responsibility of endeavoring to find employment for discharged soldiers, who upon their return to Canada are physically and otherwise fit for work. All expenditures incurred in this connection are to be borne by the Province.

(4) The Military Hospitals Commission assumes the responsibility of taking care of all returned soldiers who for any cause are incapacitated for employment or require special training or treatment before being able to undertake employment.

(5) In order to assist the Military Hospitals Commission in connection with the foregoing, each Provincial commission is constituted a branch sub-committee of the Federal commission.

(6) Each Province furnishes the Federal commission with a statement of the institutions and facilities within its borders which will be available for the purpose of caring for the various classes of returned soldiers referred to in (4) above.

(7) All expenditures necessary in connection with such responsibilities shall be borne by the Military Hospitals Commission, with the exception that where institutions under Provincial administrations are made use of for educatonal work, the Provincial authorities will remit the fees which it is customary to charge.

The above arrangement, of course, makes no attempt to deal with anything more than the problems of the moment. A time will come at the conclusion of the war when soldiers will return in much larger numbers than can be taken care of by any such methods.

Roughly speaking, the soldiers who then return will fall into three classes. Those who are incapacitated will have to be taken care of in Soldiers' Homes at the country's expense. Those who are partly incapacitated can probably be fitted for some new occupation by means of vocational training, which also will be provided at the country's expense. The third class will consist of men who are efficient, including those who have become efficient upon their discharge from a Convalescent Home. It is this class for which wise and comprehensive planning is now necessary.

While the responsibility for perfecting such plans will naturally rest upon the commissions that have been appointed for that purpose, your Committee have encouraged them to give careful study to the possibilities of land settlement, preferably under community system that would enable the cultivation of the soil to be carried out under supervision. The clearing of land preparatory to such settlement, road building, and other undertakings in which large numbers of men could be absorbed, sometimes permanently, sometimes only temporarily, would all be fruitful fields for investigation.

For some time past manufacturers have been assiduously canvassed in an effort to find openings into which returned soldiers can be placed. As a temporary expedient, or as affording an auxiliary channel of employment, this stock-taking of factory openings will unquestionably prove useful. It goes without saying, however, that the large majority of manufacturers will gladly provide employment for those of their men who return to them after having served in the trenches. Not only that, but the large majority of manufacturers will be disposed, in order to furnish work to a man who has done his duty, to make an opening for him by discharging an eligible man who has failed to respond to the call. Under these circumstances it is questionable whether the concentration of effort upon placing returned soldiers in our factories is not to some extent at least misdirected.

If a record could be kept of the occupation of every soldier prior to his enlistment, and if manufacturers were to assume the responsibility of finding employment for all who had previously been engaged in manufacturing occupations, they would be doing all that should be expected of them, proportionate to other classes of employers.

There seems to be a disposition on the part of the commissions that have been appointed to place too much reliance upon the absorbing power of our manufacturing establishments and to pay too little heed to the broader plans which can only be successfully executed by the initiation of large public undertakings. If Canadians are to meet the difficult situation that will soon be upon them, it is of the utmost importance that the commissions referred to should lose no time in the preparation of plans. In this connection your Committee have pledged the services of the Association in any capacity in which they can be utilized.

Labor.

The steadily increasing shortage of labor has been the subject of many communications received by the Association, suggesting that steps of one kind or another be taken in an endeavor to alleviate the situation.

One of the most obvious ways to overcome the difficulty would naturally be to take full advantage of the offer of the Women's Emergency Corps, who have secured applications from hundreds of women who are ready to take the places of men who have enlisted, both in industrial and clerical occupations. The magnificent spirit that prompts women to make the sacrifices herein involved should be given every encouragement by employers, who in their turn should show a willingness to make sacrifices themselves in order that the womens offer of service may be utilized to the fullest extent. That such a substitution is largely practicable is amply demonstrated by the armies of women now engaged in factory work in England. Should the war be prolonged, it is inevitable that Canada must follow in England's lead, and it would seem to be no more than good business for our manufacturers to anticipate conditions that will sooner or later be forced upon them by beginning to make the change now.

To some extent the situation might, of course, be relieved by working seven days a week instead of six. This would necessitate a suspension of the Lord's Day Act. This matter was delegated to the Legislation Committee for handling, and will be dealt with in the report which they will present later.

It was suggested to your Committee that representations should be made to the Government looking to a suspension of the Alien Labor Act and to a relaxation of the Immigration Regulations. After careful investigation no good grounds could be discovered for approaching the Government in this connection. Owing to the brisk demand for labor of all kinds in the United States, it is doubtful if the removal of all immigration barriers would lead many workmen to seek employment on this side of the line. Highly skilled employees, re-

quired for new processes or to replace indispensable men who have enlisted, can usually be secured in the United States by an offer of high wages, and to such men the immigration regulations present no difficulty, so long as they are not alien enemies.

Anti-German Leagues.

On various occasions your Committee have been asked to endorse, and to assist in increasing the membership of, leagues formed to boycott German trade after the war. While such movements spring from a loyalty that is beyond question, the view taken by your Committee has always been that our Association should refrain from stooping to vindictiveness, even though the object of that vindictiveness were the enemy whose commerce and industry it is for the present our duty to endeavor to strangle. From the standpoint of these leagues themselves, it is questionable whether the support of our Association would do them any real good, because of selfish motives that might be imputed to us. For these reasons your Committee have held aloof.

Forest Preservation.

The forests of Canada represent an asset, the importance of which can hardly be exaggerated. More than five thousand wood-using industries look to living forests for their sole stock of raw materials. In these industries $40,000,000 a year is paid out to 110,000 employees, and more than $260,000,000 of capital has been invested in them. Out of Canadian forests we derive $182,000,000 worth of manufactures annually.

The whole future of these numerous industries depends absolutely upon a cheap and convenient supply of forest materials. To injure the storehouse of their raw materials inflicts damages that reach even beyond the operations of lumber of pulp plants. Abundant forest growth is absolutely essential to stream flow, and the menace of forest destruction to all forms of hydraulic development in Canada is a matter of most serious concern. Similarly, the fertility of agricultural lands and the best development of crops cannot be separated from the maintenance of a due proportion of tree life. When it is considered that from 50 to 60 per cent. of the total area of Canada is fit for forest crops, and for them alone, the logic of forest conservation cannot be withstood.

Facing the absolute necessity of holding Canada's forests in a condition to yield the maximum income for future as well as present, it becomes the urgent duty of Provincial and Federal Governments to do their utmost to stop the heavy waste of valuable timber year after year from preventable fires. That some of the governments holding in their hands the responsibility for forest management are not taking the maximum precautions against fires is evident from the yearly record of wasted timber lands. British Columbia is energetically building up a forest-guarding system which assures a steady diminution of its annual losses. The Quebec Government has shown a willingness to investigate improved plans of forest guarding and has steadily strengthened its forest laws, placing restrictions on careless burning by settlers, penalizing infractions of the law by fines and imprisonment, and closely co-operating with the limit-holders' organizations to cut down the destructive effects of fire. New Brunswick this year has entered upon a comprehensive forest survey, the objects of which are to determine the location, quantity and quality of provincial timber resources, set apart non-agricultural land for perpetuation in forest, and devise a comprehensive policy for the future.

Ontario's forest protection system has witnessed little alteration in design during thirty years or more. Few of the modern improvements which have given excellent results the world over have commended themselves to Ontario. As an instance, the remarkable success of timber protection in the 25,000 square miles of Quebec limits, patrolled by limit holders' associations, is due chiefly to *close* and *continuous supervision* of the rangers and the providing of fire prevention equipment such as telephone lines, trails, lookout towers, ranger cabins, etc. In neither of these respects has Ontario shown reasonable progress. Equipment has not been provided, and the 442 rangers have a total of 12 inspectors working along railways, and 8 supervisors on lands under license. In the enormous areas to be covered, neither the number of the inspection staff nor the system under which they work can give adequate results. What is needed is a thorough rebuilding of the Ontario forest protection system from the "head office" control outward to the field workers.

This suggested reorganization was recently endorsed by over 22 of the leading Boards of Trade of Ontario. These bodies asked also that the Government inaugurate some method of controlling the clearing fires started by settlers in forested districts. British Columbia and Quebec oblige the rangers to supervise settlers' clearing fires to the extent that settlers must pile their slash carefully and abide by a few simple instructions, such as the choice of a quiet day for firing. This is called the "permit system" and works no hardship on the settler, while protecting valuable timber.

What has been outlined here represents a relatively simple reform in the forest administration of Ontario, and while calculated to achieve far-reaching and valuable results, should involve little additional expense.

Miscellaneous.

In fixing upon Hamilton as the place for this year's Annual Meeting, your Committee had to disappoint the Winnipeg membership, who have not had the pleasure of receiving the Association in Convention since 1906. In order that there may be no argument as to where next year's Annual Meeting will be held, your Committee beg to announce that it will be in Winnipeg on dates that will later be agreed upon.

Mr. Thomas Roden and Mr. William Stone have been appointed as the Association's representatives on the directorate of The Ontario College of Art. Mr. William Robins, for many years a faithful attendant on meetings of our Executive Council, was delegated to represent our Association at the Imperial Council of Commerce which met in London last week.

All of which is respectfully submitted.

G. M. MURRAY, *Secretary.* J. H. SHERRARD, *Chairman.*

Discussion.

The report of the Executive Committee was read by Mr. E. G. Henderson, who afterwards moved its adoption, in a short speech.

A short debate was precipitated over the clause in the item headed Labor, which said: "To some extent the situation might of course be relieved by working seven days a week instead of six. This would necessitate a suspension of the Lord's Day Act."

Mr. Fraser took exception to this clause, believing that in sanctioning it the Association would be taking a retrograde step.

Mr. Mortimer said that if anyone would ask for the removal of the clause from the report, he would second the motion. Mr. Fraser said he would be very glad to move it. Several members thereupon took issue with Messrs. Fraser and Mortimer.

THE PRESIDENT—"This will be dealt with in the discussion on the report of the Legislative Committee. Is there any further discussion on the report before I put it to the meeting? If not, I would put the motion for the adoption of this report." (Motion put and report adopted.)

RECEPTION & MEMBERSHIP

FOR the first time since the reorganization of the Association in 1899 it is the misfortune of your Membership Committee to have to report a loss. On May 1st, 1915, our roll of members numbered 3,061; on May 1st, this year, it numbered only 2,983; a loss for the twelve months of 78, or a little less than 3 per cent.

The resignations which it was found necessary to accept during the year total 168. Of these 71 were due to discontinuance of business and 9 to amalgamations. Hard times and the need for retrenchment accounted for 87 more, 18 of which were second memberships. As far as could be ascertained, only one member resigned because of dissatisfaction. To offset the above, applications were accepted from 90 new firms.

From a geographical standpoint, the net loss seems to have been fairly well distributed. Ontario and Quebec, where our membership is strongest, suffered the greatest loss, the reduction in each case being 29; in the Maritime Provinces the loss was 13; in Alberta and Saskatchewan, 8, and in British Columbia, 3. Manitoba alone shows a gain, the net increase there being 4.

The distribution of the membership on May 1st last, by Provinces and by classes is shown in the following table:

	$10	$15	$25	$35	$50	$100	$150	Total
Maritime Provinces	80	31	19	9	5	2	1	147
Quebec	339	189	80	66	61	14	11	760
Ontario	816	387	215	183	92	21	8	1,722
Manitoba	178	36	23	11	2	..	..	250
Alberta and Saskatchewan	26	8	2	2	..	1	..	39
British Columbia..	37	10	5	8	3	1	1	65
Totals	1,476	661	344	279	163	39	21	2,983

The 168 resignations accepted during the year represented a loss in revenue of $2,270; the 90 applications accepted represented a gain in revenue of $1,215. The net loss from these sources, therefore, was $1,055. As against this, however, there were revenue gains due to the fact that some members, mostly munition manufacturers, were scaled up to higher classes. The amount thus realized was $755, so that, despite a loss in numbers of 78, the loss in potential revenue was only $300.

The total potential revenue from fees, arrived at by extending the figures in the above table, was $58,240 on May 1st last. A year ago it was $58,540; two years ago $57,970.

At the present time nearly 200 members are on what is known as the Arrears List. Many of these have actually tendered their resignations; others are on it because they are three months or more in arrears with their fees.

When a resignation is tendered without any reason being assigned for the action, it is customary to have the member called upon, by one of the staff if practicable, otherwise by a fellow member, in order to minimize the chance of loss through misunderstanding. The same course is ordinarily pursued in the case of members in arrears who fail to reply to correspondence. If the number of such cases now to be dealt with seems unnecessarily large, it must be borne in mind, first, that resignations and arrears have occurred with unusual frequency of late because of trade conditions; and second, that there have been fewer opportunities for utilizing the services of the staff in getting arrears straightened up, due partly to the pressure of more important work, and partly to changes and temporary reductions in the staff itself. Under normal conditions the Arrears List would contain from 60 to 75 names. At the close of the fiscal year 1914-15, there were approximately as many names on it as there are now. Despite adverse circumstances, therefore, the situation has grown no worse, though unfortunately it has shown no improvement.

The same conditions that prevented the arrears being expeditiously dealt with made it impracticable to engage in a campaign to secure new members. Such applications as were accepted were for the most part tendered without solicitation. During the early months of the year it is questionable if the time was opportune to launch a membership campaign, even had the staff been able to undertake it, for the trade outlook did not encourage the belief that it would yield returns commensurate with the expense involved.



J. W. HOBBS
Consolidated Plate Glass Co. of Canada, Limited, Toronto
Retiring Chairman, Membership Committee.

The slow but steady improvement that has been noticeable in business conditions of late would suggest that such a campaign might soon be undertaken to advantage. It is now nearly three years since any really persistent work of this kind has been engaged in, and the interval has witnessed the establishment of many new firms upon whom the question of membership in the Association has never been pressed. Not only that, but quite a number of firms are now on their feet again that felt constrained to resign from the Association because of the hard times in 1914.

The new edition of the Canadian Trade Index that will be out shortly will list about 7,000 Canadian manufacturers. All of these are eligible for membership, but less than 3,000 of them are actually on our roll. Of the 4,000 non-members, probably half might be left out of our calculations, either because of their business being small and local or because of the inability of the Association to give them individual service. At the very

lowest computation, however, there ought to be from 1,000 to 1,500 who could be brought into the Association if properly approached and systematically followed up.

The increase of prestige and influence which such an addition to our strength would give us would of itself suggest the desirability of making a determined effort to convert this possibility into an actuality. Viewed from the standpoint of the broader and the better service which a larger revenue would enable the Association to supply, the inauguration of a campaign takes on new importance. More significant, perhaps, than either of these is the fact that a bigger revenue is an absolute necessity in view of the new commitments recently made in regard to the Winnipeg office, and the obligation the Association is under to give more adequate service to the membership in the Maritime Provinces and in British Columbia.



J. ALLAN ROSS
Wm. Wrigley Jr. Co., Limited, Toronto
Elected Chairman, 1916-17, Membership Committee, C.M.A.
—British & Colonial Press Photo.

While it is true that the Association has a reserve of some $48,000, and while it would be quite permissible to draw on that reserve at odd intervals when a sudden and unforeseen shrinkage in our income made it necessary, our aim should be to meet all fixed and regular expenses out of current revenue. When circumstances arise that make a considerable addition to our fixed charges necessary or desirable, our first care should be to provide ourselves with sufficient additional income to carry the new charges

Without further trespassing upon what is more properly the field of the Executive Committee, your Membership Committee desires to recommend that this meeting resolve either to lay plans for a campaign that will add substantially to our numerical strength, or to give immediate consideration to the advisability of increasing the minimum fee say from $10 to $15.

To be on the safe side, the Association ought to increase its revenue $8,000 a year. This result would be immediately brought about by the enrolment of 800 new members at $10 each, or something less than that number if they averaged higher. On the other hand, an even larger revenue would be secured by abolishing the Class A or $10 membership, making the minimum fee $15, and advancing the present $15 class to $20. Assuming that very few, if any, memberships would be cancelled because of such a moderate increase, the changes suggested would yield $5 extra from each of 1,860 firms, or $9,300 altogether.

It goes without saying, of course, that such a change could only be brought about by amending the By-laws, and giving notice of motion to that effect. As no such notice has been given, action by this meeting is impossible, but an expression of opinion from this meeting would be helpful in securing favorable action from a special general meeting that might be called in the near future to put such a change through.

Should the suggested modification in the schedule of fees meet with favor, the campaign for new members could still be undertaken with good chances for success, in which event the combined result would be a revenue that should enable the Association to strengthen its service immeasurably.

Looking to the future, in an endeavor to prepare for conditions that will have to be faced when the war is over, when there will be a stoppage of orders for munitions and war materials, when new markets will have to be cultivated, and when industry will for a time be more or less dislocated, it is of prime importance that we should take steps now to secure for ourselves an adequate revenue, so that when our service is most needed it will not fail.

Trade Sections and Branches.

Applications for permission to incorporate new Trade Sections were received from four groups of manufacturers during the year. Three of these applications were granted, and the sections formed are known as the Leather Belting Section, the Saddlery and Allied Trades Association, and the Corrugated and Fibre Box Section. One from the Asphalt Roofing Manufacturers' Association is being held in abeyance pending the reconciliation of divergent views. The Graphic Arts Section has temporarily ceased operations, but all other sections have been characterized by the usual activity.

The work of some of the Branches has been conducted under difficulty due to the absence of the regular secretaries on war or other duty. This was notably the case with the Montreal, Toronto and Manitoba Branches. The work of the first two is now being done by acting secretaries, but a permanent appointment has recently been made in Winnipeg in order to make it possible for aggressive work to be undertaken all through the middle West. In this connection favorable consideration was given to an application for the formation of a Prairie Provinces Branch to embrace all members in Manitoba, Saskatchewan and Alberta, and to supersede the old Manitoba Branch.

All of which is respectfully submitted.

G. M. Murray, *Secretary.* J. W. Hobbs, *Chairman.*

Discussion.

The motion to adopt the report was made by Mr. H. P. Hubbard, who, in the absence of Mr. J. W. Hobbs, chairman of the committee, had presented it to the convention. Its reading precipitated a discussion as to the best means of increasing the revenue of the Association, whether by securing more members on the present scale of fees or by advancing the fees.

On the understanding that the acceptance of the report did not involve the acceptance of the recommendation of the committee to increase the minimum fee, the report was adopted.

LEGISLATION

THE work of your Legislation Committee has had to be conducted under difficulties during the past year, owing to the resignation of the Legal Secretary, Mr. Wegenast, to engage in private practice. Under ordinary circumstances the policy of the Association would have been to secure the services of a satisfactory successor, and to continue as before, but experience had shown that such a course was not altogether desirable from the standpoint of a qualified legal practitioner, because it was seen that occasionally it might prevent the holder of the position from complying with strict professional etiquette, a situation to be avoided just as much in the interests of the Association as in the interest of the solicitor who might be engaged. In an effort to solve the difficulty, consideration was given to the feasibility of retaining a firm of solicitors to do all the Association's work, including the furnishing of advice upon enquiries which members sent in from day to day. This, of course, would have been satisfactory as far as it went, but it would have involved, to some extent at least, abandoning the initiative which it was customary for the Association to take in legislative matters, and to restrict the service simply to the giving of legal advice.

As the result of a close study of the whole problem, and after full consultation with the Executive Committee, a plan has now been roughed out which it is thought will permit of the work being carried on in future under conditions that will be eminently satisfactory to all concerned.

Just as soon as arrangements have been finally completed, members will be advised by circular letter as to the character and the extent of the service which will be available for them.

Saskatchewan Legislation.

One of the first questions to occupy the attention of your Committee on their acceptance of office was the serious situation with which business interests were confronted as the result of radical legislation passed by the Saskatchewan Legislature in June, 1915.

During the previous summer, a Commission had been appointed by the Government of the Province to investigate grievances that were said to prevail owing to conditions attached to the purchase of agricultural implements. In due course the Commission reported that while the weight of evidence showed very little cause for dissatisfaction with the conditions under which small implements were bought (such as ploughs, harrows, seeders, mowers and binders), in their opinion hardship was frequently inflicted as a result of the arduous conditions under which tractors and other forms of power machinery were ordinarily purchased for use on the farm.

On the recommendation of the Commission, the Legislature passed an Act known as The Farm Implement Act, which regulated in great detail the conditions under which all sorts of farm implements were to be sold. For example, the vendor was required to file with the Minister of Agriculture, before the first of February in each year, a list of the implements he would offer for sale, and the prices at which he would offer them, whether for cash or for credit. He was also required to file similar information regarding parts and repairs, and the places in the Province where same were to be had.

Where implements were sold on credit, and a contract taken from the purchaser, that contract had to be in a form specified in an Appendix to the Act. For small implements there was one kind of form, for large implements another kind of form; for second-hand implements the contract had to be in still another form; but such was the crudity with which the Act had been drawn, that the use of that form would have violated certain express provisions of the Act and so rendered the contract null and void. Implements sold by manufacturers to dealers were required to be sold under the same form of contract as was specified for sales to farmers. The fact that it was entirely unsuited to such transactions was apparently quite overlooked by those responsible for the legislation,—a fact which further suggests that the legislation was drafted hastily and without mature thought.

One of the clauses in the contract provided that either of the parties might cancel the order at any time before actual settlement is accepted by the vendor, in which case the other party would have no claim for damages. The effect of this provision was to destroy in a large measure the value of an order to implement companies, and to prevent them from estimating the reasonable requirements of their customers.

Security Destroyed.

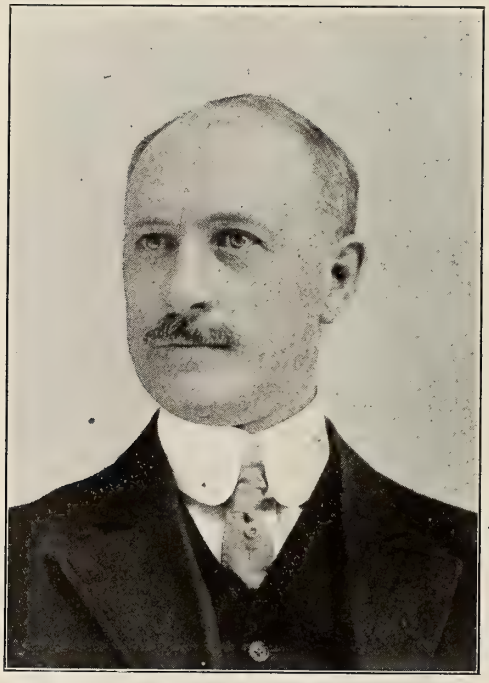
On the same date that the above Act was passed, there was also passed a radical amendment to what was known as The Exemptions Act. The purpose of this old Act, originally one of the Ordinances of the North-West Territories, was to protect the struggling farmer against the demands of a grasping creditor. By its provisions a farmer could hold as exempt from seizure under execution by the sheriff certain chattels, such as necessary food and clothing for himself and his family, three horses, six cows, and certain other live-stock, with feed for same, a waggon, a plough and other implements that were specified.

Now, while the sheriff could not under execution seize any of the goods above referred to, there was nothing to prevent a farmer who was willing to do so, from giving a chattel mortgage on his exemptions, in order to secure a debt or a temporary loan. As a matter of fact, this practice was very generally resorted to in Saskatchewan by settlers whose means were limited and whose credit could only be established by making the utmost use of their possessions. On the other hand, implement manufacturers and implement dealers repeatedly felt constrained, where notes were past due, to secure themselves by obtaining such mortgages from debtor farmers, not with the idea of seizing, but simply for their own better protection. The amount of past due agricultural paper held by all implement manufacturers is clear evidence of the leniency of the policy they are accustomed to pursue, and of the fact that they seize only in cases of absolute necessity or where there is an obvious intention to defraud.

To the consternation not only of the implement manufacturers and dealers, but also of the banks, this form of chattel mortgage security was practically wiped out by an amendment to The Exemptions Act, which stated that notwithstanding anything contained in any Act in force in Saskatchewan, or in any agreement to the contrary, any person who had executed a chattel mortgage on any of the chattels referred to in The Exemptions Act should, in case of seizure under the said mortgage, have the right to claim as exempt from such seizure and from sale any such chattels covered by said mortgage which could not be so seized or sold without depriving the

mortgagor of the number of the kind of chattels referred to in The Exemptions Act, the mortgagor to be further entitled to a choice from the greater quantity of the same kind of chattels which were declared exempt under seizure and sale. This legislation, it will be observed, did more than prohibit the mortgaging of exemptions, but actually declared null and void any such mortgages that might then be in existence. Under The Bank Act, banks are empowered to take chattel mortgages to secure past due debts, but this legislation destroyed their security. In short, as affecting bankers and manufacturers, the Act amounted to confiscation, and so seriously did it shock public confidence that for a time it seemed to leave implement houses no alternative but to sell in the Province on a strictly cash basis.

Less than two months later, a proclamation issued by the Lieutenant-Governor and Council declared that no personal



J. R. SHAW
Canada Furniture Manufacturers, Limited, Woodstock
Retiring Chairman, Legislation Committee, C.M.A.

property, such as live-stock and implements, belonging to a debtor or in his possession by virtue of a conditional sale, lien agreement, or hire receipt, should be seized or sold under a chattel mortgage or under a lien agreement without first obtaining the consent of the sheriff. In other words, this proclamation made the sheriff supreme in his own district, gave him even greater power than the court in respect to seizures and sales under a chattel mortgage or lien agreement. If he gave his consent the sale had to be made by himself or his assistant, for which service he was authorized to charge certain fees. His natural procedure would be to sell by public auction for whatever the article would bring. So long as the dealer was able to repossess in the ordinary way, he stood a fair chance of recouping himself by putting the implement in first-class shape and waiting for an opportunity to make a profitable sale. Under a sheriff's sale, however, which would be a forced one, there was little expectation that the chattel would realize much more than enough to pay the sheriff his fee. Indeed, by collusion between the sheriff and the debtor, the latter could buy in his own chattel for a nominal amount, thereby cancelling the creditor's lien and securing for himself a clear title.

The apparent disregard shown by the Government of Saskatchewan for the rights of manufacturing creditors is still further illustrated in a pamphlet issued by the Department of Agriculture in the summer of 1915, entitled, "How Debtors and Creditors may Co-operate." This pamphlet advised farmers, who found themselves unable to pay all their debts, to give preference to such items as wages, threshing, taxes, groceries, twine, rent, blacksmithing and repairs, interest on mortgages, etc. If, after these liabilities were discharged, there was anything left over, it would be quite in order for the farmer to liquidate his debts for lumber and machinery. This, it must be remembered, was advice, not law, but it clearly showed the disposition of the Government to subordinate the rights of lumber and implement manufacturers to those of other business interests.

The Remedy.

Having in mind the confiscatory features in the legislation here referred to, your Committee approached the Canadian Bankers Association, and influential Boards of Trade throughout the Dominion, with a view to making a determined effort to obtain a disallowance at the hands of the Federal Government.

Such representations would undoubtedly have been made and pressed very vigorously but for assurances received that the Saskatchewan Legislature would itself abandon the retroactive feature of the amendment to The Exemptions Act. This, we understand, has since been done. Except in this one respect, no legislative action has been taken towards relieving the situation of features which are not only highly objectionable but absolutely unjust.

To us as manufacturers the feature of greatest significance in all this is that our business rights are threatened, owing to the radical turn which legislation in the West has recently taken. Saskatchewan is, of course, primarily an agricultural Province, and no criticism attaches to the Government of that Province for its desire to protect the interests of its people and to foster the development of their basic industry. In working to that end, however, they should not overlook the fact that other interests have their rights as well as the farmers, and in as far as the enactments of the Legislature over-ride or destroy those rights, they must be vigorously attacked, even to the extent of asking for disallowance.

Your Committee are hopeful enough to believe that such difficulties as have arisen in the past have been due to a failure on the part of Western legislators to appreciate in their true light the problems of the manufacturer and the business man. Having in mind the extent to which the West has been developed by the credit of Eastern manufacturers, it would seem to be very unwise, to say the least, for any Western legislature to force manufacturers, whether of implements or any other article, into a position where they could not safely do business on any other basis than one of strict cash. That their enactments have tended in this direction may be as much the fault of business men for not keeping in sufficiently close touch with the Western Provincial Governments as it is the fault of those Governments themselves for their failure to look at things from the business man's standpoint.

The whole situation is one calling for careful study and the friendliest kind of co-operation, and in the opinion of your Committee the Association would do well to make careful plans for bringing its policies and its viewpoints forcefully and persistently to the attention of Western Provincial Governments, so as to ensure proper consideration being given to business interests before bills are drafted and introduced.

The Companies Reference.

It will be remembered that in 1910 the Dominion Government submitted to the Supreme Court of Canada, in the form of a reference, or stated case, certain questions touching the relative jurisdictions of the Dominion and the Provinces over the incorporation of companies. The two main questions in the reference were, first, as to the power of a Provincial Government to incorporate a company to do business outside the boundaries of the Province, and second, as to the power of the Provinces to require Dominion companies to take out a license before carrying on business in the Provinces. There were also questions with reference to the power to incorporate and control insurance companies.

Insurance Reference.

About the same time a decision by a police magistrate of Montreal in a prosecution against Messrs. Willis, Faber & Co., had raised the question whether the Dominion Insurance Act was within the power of the Dominion Parliament. Another stated case was therefore drawn up and submitted to the Supreme Court as to the validity of the provisions of the Insurance Act of Canada requiring foreign companies, and provincial companies doing extra-provincial business, to take out licenses from the Dominion Insurance Department. This case has been called the Insurance Reference.

Intervention of C. M. A.

As both cases, particularly the Companies Reference, were important to commercial companies, and as the Canadian Manufacturers Association was in a better position than any other commercial body to act in a representative capacity for these companies, application was made through Mr. Wegenast for leave to intervene. On the recommendation of the Legislative Committee, confirmed by the Executive Council, a position was taken on behalf of the companies favoring the power of provincial companies to do business outside the province, at least to the extent of purchasing supplies and disposing of surplus products, but favoring the Dominion in its contention that Dominion companies could not be subjected to provincial licenses.

The John Deere Cases.

As soon as the two references were set down, it was evident that efforts would be made by the provinces to prevent their being heard. A motion was at once made on behalf of the provinces to quash the references on the ground that the Supreme Court had no jurisdiction to entertain them. This preliminary objection was pursued to the Privy Council and finally decided against the provinces. On the change of government in 1912 further efforts were made by the provinces to have the references withdrawn, and it was due in no small measure to the efforts of the Canadian Manufacturers Association that the cases were ultimately proceeded with. The doubt as to whether the reference would go on, coupled with the feeling that they were not in such form as to promise a satisfactory solution when decided by the Privy Council, led the Association to favor the institution of a number of concrete cases embodying the issue of greatest importance, viz., the validity of the extra-provincial licensing Acts as regards Dominion companies. A number of cases had arisen in British Columbia in which the John Deere Plow Company, Ltd., was a party; and Mr. Wegenast was authorized to act for the Company, with the understanding that the cases would be pressed for decision by the highest tribunal. One of the cases, John Deere Plow Company *v.* Agnew, having been proceeded with during the delay in the Companies Reference, had reached the Supreme Court of Canada in February, 1913, when the main argument in the Companies Reference was being heard, and was accordingly treated by the Court as in the nature of an adjunct to the Companies Reference. Mr. F. H. Chrysler, K.C., and Mr. Wegenast appeared for the Canadian Manufacturers Association and for the John Deere Plow Company. The decision in the Agnew case was in favor of the Company, but on the ground that the transaction in question did not constitute a carrying on of business in the province. This reasoning made it unnecessary to decide whether the fact of having a Dominion charter relieved the Company from taking out a license. The decision, however, was so favorable to commercial companies in another aspect, which need not for the moment be dwelt upon, that it was thought well not to encourage an appeal. The decision of the Supreme Court on the licensing phase of the Companies Reference, being inconclusive and unsatisfactory, it was decided to bring on two more of the John Deere cases, viz., Wharton *v.* John Deere Plow Co., and John Deere Plow Co. *v.* Duck, with a view to having them reach the Privy Council by the time the appeal in the Companies Reference was heard by that body. Adopting a bold expedient, for which there was no precedent, an application was made to the Privy Council for leave to appeal direct from the decision of the trial judge, and the success of this application so facilitated the cases that they reached the Privy Council before the appeal in the Companies Reference, and came on for hearing in June, 1914, Mr. Wegenast appearing on behalf of the Company, supported by counsel for the Dominion and opposed by counsel for the Province of British Columbia. On the argument the licensing questions in the Companies Reference came up for discussion, and in their judgment the Privy Council dealt with these questions in such a way as to obviate the necessity of deciding them when the appeal in the Companies Reference should come before them. Their Lordships also gave rather emphatic expression to the same doubts which your Committee had entertained as to the likelihood of a satisfactory solution by answering the questions on the references. The decision in the Wharton and Deere cases was a very sweeping one in favor of the power of a company incorporated in the Dominion to exercise its rights in every part of the Dominion without being registered or licensed under provincial Companies Acts.

The Bonanza Case.

The Companies Reference and the Insurance Reference did not come on for argument until November, 1915. In the meantime the case of the Bonanza Creek Gold Mining Company *v.* the King had arisen, embodying in concrete form the other main question in the Companies Reference, viz., the power of a provincial company to do business outside its incorporating province. This case was therefore set down for argument alongside the Companies Reference and Insurance Reference. As the provinces had evinced in their printed arguments an intention of reopening the question decided upon the John Deere cases, and as the whole question of the validity of the licensing Acts of all the provinces was open for discussion, it was thought wise that the Association should be represented on the argument. Accordingly Mr. Wegenast was again instructed to appear for the Association, and took part in the argument in November. The group of cases was recognized as being the most important that had come from Canada. The argument extended over a week, and in all some eighteen counsel participated for the different parties interested, including the Dominion and all the provinces.

Result of Companies Reference.

Unfortunately the results have not been commensurate with the importance of the cases. Almost the only definite practical result of the references is the reaffirmation of the

decision of the John Deere Plow Company case, and the principal passage on this phase, strangely enough, appears in the judgment in the Insurance Reference, where it was held that the Dominion can confer upon insurance companies as well as trading companies the right to carry on business in every part of Canada without any further authority from provincial legislatures. The judgment in the Companies Reference itself is very brief, covering little more than a page, and is confined almost entirely to the statement that the chief issues had been decided in the John Deere Plow Co. case and the Bonanza case.

Result of Bonanza Case.

The appellants in this case were an Ontario company whose right to carry on mining in the Yukon Territory had been challenged by the Dominion Government. The Supreme Court



GEORGE C. COPPLEY
Coppley, Noyes & Randall, Limited, Hamilton
Elected Chairman, 1916-17, Legislation Committee, C.M.A.
—British & Colonial Press Photo.

had held, basing its decision on expression in the John Deere Plow Co. case, that the company was not capable of carrying on business outside of Ontario. This decision was reversed by the Privy Council. A distinction was drawn between what a company is capable of doing and what it has the right to do. Their Lordships hold that while the Dominion is the only authority which can give a company the *right* to carry on business throughout Canada, and while a province cannot give to a company the right to carry on business in another province, yet a provincially incorporated company has the *capacity* to receive from other provinces the *right* to carry on business in such other provinces.

Result of Insurance Reference.

In the Insurance Reference their Lordships held that it was not necessary for a provincially incorporated insurance company to take out a license from the Dominion in order to do business in another province, and that the present provisions of the Insurance Act of Canada are *ultra vires* of the Dominion Parliament as regards provincial companies and also, apparently, as regards foreign companies, though this is not quite clear.

Effect on Extra Provincial Licensing Acts.

On this phase, as already stated, the Privy Council merely reaffirmed the decision of the John Deere Plow Co. case. An effort was made on behalf of the Association upon the argument to secure an expression of opinion upon the Acts of some of the other provinces. But the Lord Chancellor expressed the view that if these Acts were to be brought in question, it was preferable that it should be done in concrete cases. It is important to note, however, that the distinction between right and capacity, which was the basis of the decision in the Bonanza case, was advanced by counsel for the provinces after careful consultation, and really constituted an abandonment of the provincial position in the matter of licensing of Dominion companies.

Net Result.

Your Committee regard the results with some satisfaction as vindicating the judgment of the Committee at every stage and at the same time demonstrating the advantages of following out a consistent line of policy over a period of years. It is perhaps worth noting, also, that the activity of the Association is regarded in legal circles as having brought a valuable contribution to the constitutional law of Canada.

The net result of the whole group of cases, in so far as they relate to ordinary commercial companies, may be summed up by quoting a passage from the judgment in the Insurance Reference, which may be paraphrased to apply to commercial companies:

> "Where a company is incorporated to carry on the business of insurance throughout Canada, and desires to possess rights and powers to that effect operative apart from further authority, the Dominion Government can incorporate it with such rights and powers, to the full extent explained by the decision in the case of the John Deere Plow Co. But if such a company seeks only provincial rights and powers, and is content to trust for the extension of these in other provinces to the governments of these provinces, it can at least derive capacity to accept such rights and powers in other provinces from the province of its incorporation, as has been explained in the case of the Bonanza Co."

Provincial Legislation.

As reported last year, the Province of Alberta, after the decision of the John Deere Plow Company case, promptly amended its Foreign Companies Act so as to exclude all reference to Dominion companies. The Province of Saskatchewan, which had inheritetd the same form of Act from the old North-West Government, went to the opposite extreme and incorporated its Foreign Companies Act in the Provincial Companies Act, requiring Dominion companies to become registered as if they were local companies. A contest at once developed between the Provincial Companies Department and the companies operating under the Dominion charters. A considerable number of these companies communicated with the Association for advice, some of them suggesting that the Association should take the matter up with a view to some form of concerted action amongst the companies. After some consideration, the Legislation Committee instructed Mr. Wegenast to select a number of cases which would serve as a test and to arrange, if possible, with the provincial authorities to facilitate an action or actions which would settle the rights of the companies concerned. Such an arrangement has been made, and as a result the cases are now before the Supreme Court of Saskatchewan and will be argued in a few days.

A corresponding difficulty arose in the Province of New Brunswick, and Mr. Wagenast, acting on instructions of the

Committee, secured an appointment with the Attorney-General of the Province to arrange for a test action. A few days before the appointment, however, a bill was passed by the Legislature of New Brunswick removing all the objectionable provisions.

There is still a possibility of disputes with the Provinces of Ontario and Manitoba. The latter province has only recently circularized companies formerly licensed to pay certain fees, the intention being apparently to uphold the Licensing Act as valid against the Dominion companies.

The Real Issue.

It ought, perhaps, to be stated that at no time have your Committee regarded the issue in any of the provinces as relating to the provincial power of taxation. There has been no desire to object to any tax which could be fairly so called. The real question is as to the authority of companies duly chartered by the Dominion to carry out their objects without having hanging over them a threat of outlawry. It is one thing to require a company regularly established in a province to pay a fair tax based upon the amount of capital employed in the province, but it is another thing, and an unfair thing, to require a company to become practically reincorporated in every province, paying fees therefor upon its total authorized capital, or to jeopardize its occasional business in a province by withholding the ordinary rights of citizenship, including the right to sue in the courts.

Further Problems.

There are phases of the situation in one or two of the provinces which may require careful attention during the coming year. Some of the provinces have shown a disposition to interfere with the exercise of certain of the powers granted to Dominion companies under their charters. While this may appear to be contrary to the decision of the John Deere Company case, your Committee are inclined to the view that many charters of the "omnibus" type which have been asked for and obtained by companies, go beyond the bounds of reasonableness, and are open to objection on that ground if not on grounds of constitutional law. It may well be questioned whether a company whose real object is to manufacture and buy and sell boots and shoes should be empowered to develop water powers, distribute electrical power, promote and carry on navigation business, act as trustee, etc.

Defective Charters.

In selecting companies for the purpose of testing the constitutionality of the Provincial Licensing Act, careful consideration had to be given to this factor, and the names of many companies had to be rejected because of objections to the form and content of their charters. In some cases, although an effort had apparently been made to embody every power which imagination could devise, the main power, viz., that of carrying on trade throughout Canada, was either absent or so obscured by verbiage as to be discernible only with difficulty. Your Committee is advised that as to many charters, particularly those issued in the Province of Ontario, it is doubtful whether the decision in the John Deere Plow Co. case would be applicable, and members are advised to give due attention to the matter.

Business Profits Tax Act.

Increased taxation is one of the inevitable accompaniments of war. Prior to 1916, Canada's acquaintance with special war taxes was confined to, (*a*) the 5 and 7½ per cent. ad valorem additions to customs entries, (*b*) the miscellaneous taxes provided for in the Special War Revenue Act of 1915, including taxes on bank note circulation, trust and loan company incomes, insurance premiums, telegraph messages, railway and other tickets and the various stamp duties, (*c*) the direct tax of one or more mills on the dollar, levied by some of the provinces on the basis of property and income assessment, and (*d*) such voluntary taxation as individuals submitted to for the support of the Patriotic, Red Cross, Belgian Relief and other funds. Considering the enormous cost of the war, and the burdens that would ultimately have to be borne, it was recognized that these measures were simply a beginning, and that the Government would soon have to devise new means of augmenting its revenues.

The principle embodied in the tax on business profits, introduced by the Finance Minister at the recent session of Parliament, is more or less of a compromise between what would be fair and equitable on the one hand, and what would be practicable on the other. There was no getting away from the fact that the Government had to have more money. They could have secured it by methods that would have touched the pocket of every citizen, and exacted from the farmer and even the wage-earner his proportionate contribution. That would have been the fair way. It would, moreover, have been the simple way if, by arrangement with the provinces, the municipal machinery for tax-collecting could have been employed. Such a method, however, would have been objectionable for two reasons: first, because the Government would have had no real control over the men who were doing its work, and second, because it might have meant taxing the residents of each province on a different basis. Had the Government attempted to provide its own machinery for collecting such a tax, the cost of collection would unquestionably have been high and out of all proportion to the amount secured. Perhaps it is only fair to add that politically, too, it would have been unwise, and in war time any Government may plead a certain amount of justification for protecting itself against trouble.

On this same score it was unquestionably good politics to adjust the tax so that it would fall on the shoulders of the few who could well afford to pay it, rather than upon the shoulders of the many who could not so well afford to pay it. Not only that, but public sentiment was not unreasonable in demanding a tax on the profits of those classes of business that benefited directly from the war.

A tax of 25 per cent. on profits in excess of 7 per cent. can scarcely be held to be burdensome. Before such a tax begins to operate, capital has had a fair return. If any individual business is heavily taxed, it is only because the profits earned by that business have themselves been large. To have objected to such a proposal, when the country was laboring under the stress and strain of war, would have been narrow and selfish, and in the opinion of your Committee unworthy of the Association.

Notwithstanding the fact that it was recognized members of our organization would be amongst the heaviest contributors under this form of taxation, it was decided, for the reasons stated above, not to oppose the legislation in any way, but by friendly criticism and advice to aid in putting it into the most satisfactory shape. Representations were made with a view to having reserves classed as capital, and in this respect our desires were met. Cases were cited to show that great hardship would sometimes be caused by making the measure retroactive. The justice of our contention herein was so obvious that instead of making the legislation retroactive to August 4th, 1914, as originally proposed, it was made retroactive only to January 1st, 1915.

Owing to the fact that different firms follow different methods in the distribution of profits, it may easily happen that one will be taxed disproportionately to another. For

instance, there may be three businesses conducted as partnerships; in the first one the working members draw no stipulated salaries; in the second their salaries are nominal only; in the third the salaries allowed fairly reflect the value of the services rendered. In the case of the latter, the salaries paid would show as an expense to be taken into consideration before computing the 7 per cent. profit to be exempted from taxation. In the case of the firm which paid no salaries, the operation of the tax would commence that much sooner.

It is conceivable that a careful study of typical financial statements will point to the likelihood of several such anomalies occurring, and in order to contribute to greater uniformity and fairness of administration, it is the intention of your Committee to issue to members a circular of advice on this subject at an early date.

Workmen's Compensation.

The Workmen's Compensation Board for the Province of Ontario has had recently issued a very full report covering the first year's operation of the Act. As copies will no doubt be sent to all employers upon whom assessments have been levied, no extended reference to it on this occasion is necessary.

"The Act," says the report, "has worked smoothly and satisfactorily. The benefits of the new system of law to both workmen and employers are recognized and appreciated. Claims are expeditiously and inexpensively disposed of. Employers are immune from the expense and annoyance of litigation. The intricacies and hardships upon workmen and their families of the old doctrines of negligence, common employment and assumed risk are eliminated. The facts to be determined by the Board are usually few and simple. There is no longer need for payment of legal fees either by workmen or employers."

Referring to rates of assessment, which as a matter of fact have this year been reduced anywhere from 12½ per cent. to 50 per cent., as compared with the rates in effect for 1915, the report states: "Though in view of the unavoidable incompleteness of the actual figures, the first year's experience of the Act cannot be regarded as conclusive, it indicates that the financial burden of the new law will be less than was anticipated. The assessments levied for 1915 are in most cases more than sufficient to meet the requirements. Though in a very few instances the bad accident experience has called for an increase of rate, the Board has felt warranted in making substantial reductions in most classes of industry. In a number of classes, or parts of classes, where the experience was good and the surplus large, reductions are being applied retroactively for 1915."

The manufacturing groups whose accident record necessitated an increase in assessment were only three in number, viz.: Furniture, glass moulding, and metal stamping.

No amendment to the Ontario Act were considered at the session of the Legislature just closed. It is a foregone conclusion, however, that next year some provision will have to be made in the Act to take care of First Aid. As the Act stands at present, the employer is under no legal obligation to provide medical attendance or First Aid, though both humanitarian motives and the desire to minimize claims against the group to which he is contributing prompt him to do so. Unless the injured workman is willing to assume the expense thereby involved, it must be borne by the employer, for there is nothing in the Act to authorize the Board to charge such expense against the group fund. When the Act was passed, it was the expectation of employers that medical attendance and First Aid would form part of the programme of the Safety Associations. Given time to perfect their organization, no doubt these Safety Associations could take this work effectively in hand. Unless they can show actual progress in this direction before the end of the present calendar year, it is altogether likely that the Board will take the matter in its own hands. On account of the excellent results that would seem to be possible from co-operation between employers and employees in this matter, it would seem desirable for the Safety Associations to mature their plans at once.

Your Committee believe that before the Legislature meets again another effort should be made to secure legislative authority for the adoption of the current cost instead of the capitalized plan. The substantial reductions made in 1916 assessments indicate very clearly that the amount of money withdrawn from productive industry by the 1915 assessments was unnecessarily large. In the case of some groups the excess collected in 1915 has been refunded in cash; in the case of other groups it has been applied towards the payment of the 1916 assessment; in still other groups it seems to have been retained for the purpose of building up a reserve. This lack of uniformity in the method of dealing with surpluses is certain to be resented by manufacturers who fail to understand the reasons for the action taken by the Board. Apart from the fact that in the initial stages of the operation of the Act it was impossible to forecast with any degree of accuracy what the yearly requirements of each group would be, there can be no good reason, now that the casualties and claims for a full year are before the Board, why they should adhere to a plan that must prove embarrassing to the employer when they might with equal safety adopt a plan that would financially be much more convenient to those who are required to provide the money out of which claims have to be paid.

The expenses incurred in the administration of the Act during 1915, exculsive of office rent, lighting and heating, the salaries of the Commissioners, and permanent equipment, was $100,846. Of this amount the sum of $77,436 was charged against the various groups in Schedule 1 of the Act, and $15,238 against employers in Schedule 2 of the Act.

A little over a year ago a deputation representing the Association waited upon members of the Ontario Government to request that the cost of administration should be met out of the Consolidated Revenue Fund, and an undertaking was then given that this would be done, at least up to the amount of $100,000 per annum. The failure of the Government to implement its undertaking was made the occasion for a further interview some two months ago. Although there seemed to be a decided difference of opinion among the members of the Government as to what had previously been promised, the deputation was finally encouraged to believe that the omission would be corrected, not simply for 1916 and subsequent years, but for the past year as well.

The Nova Scotia Act, passed a year ago, has not yet been proclaimed, but the presence in that Province of Mr. Hinsdale, who did all the preliminary organization for the Ontario Board, leads to the belief that it is the intention of the Government to bring it into effect at an early date. When the Nova Scotia Act does go into operation, the system of assessment to be followed will be the Washington system, where the rate is a built-up or adjustable one, calls being made only as they are needed.

This year the Manitoba Legislature passed a Workman's Compensation Act, which provides schedules of compensation similar to those provided in Ontario, but which at the same time gets entirely away from the system of mutual insurance administered by the State. In Manitoba the employer will insure his pay-roll for amounts and with companies satisfactory to the Commissioner. In this way the contingent liabilities of mutual insurance will be avoided, though it is only natural to expect that the companies who insure the employers of Manitoba will adjust their rates so that their entire

business for the Province will carry itself, and not leave a deficit to be charged against the profits of their operations in other fields.

Suspension of Lord's Day Act.

Your Committee have recently made application to the Minister of Justice for an Order-in-Council to suspend the Lord's Day Act as applied to a limited number of industries during the period of the war, subject always to such restrictions in regard to the employment of women and minors as are embodied in Provincial statutes. While not unmindful of the opposition which such a proposal would meet with in certain quarters, your Committee felt that the weight of argument in favor of such suspension was practically unanswerable.

Dealing first with those difficulties that find their origin in a shortage of labor, it will hardly be disputed that the demand for certain materials necessary to the conduct of the war has been such as would have taxed to their limit the resources of our producers, even had the supply of both skilled and unskilled labor been normal. For months past, however, all kinds of labor have become increasingly scarce. The enrolment of 300,000 for overseas service has not been accomplished without making heavy drafts upon Canada's working forces, drafts that of themselves would have been sufficient to convert a surplus into a considerable shortage. That shortage has in no sense been relieved by immigration; on the contrary, it has been accentuated by the concomitant growth in the demand for labor needed in the production of war material.

Meanwhile Canada is still committed to raise 200,000 men. The withdrawal of so large a number from a producing force that is already crippled would suggest the wisdom of securing, as far as it is practicable, a larger individual production from those who remain. One of the most obvious means to this end would be the suspension or relaxation of the statute which provides for a cessation of work on the Lord's Day. However necessary or desirable such a restriction may be under normal conditions, it may easily become a burden to a nation that is at war. The struggle upon which we are engaged is one where economic resources are destined to play fully as important a part as military and naval resources. The Lord's Day cannot be a day of rest for our military and naval forces; your Committee submit, therefore, that it should not be a compulsory day of rest for our producing forces.

Up to the time when this report was prepared, no word had been received from Ottawa as to how your Committee's application had been dealt with, though every encouragement was given to hope that the issue would be decided in the light of necessities imposed by the war rather than by considerations to which heed would have to be given in times of peace.

Daylight Saving.

We have before us, in the city where we are now meeting, a practical illustration of the advantages of daylight saving. The purpose of the legislation for which so general a demand has recently arisen throughout Canada, is to provide that during the months from April to October the clock shall be moved forward one hour in advance of standard time. By this means the vast majority of people whose occupations keep them from outdoor recreation until failing daylight renders it less attractive, would find after their work that there was one hour more daylight to be enjoyed every twenty-four hours during the best six months of the year.

When the Daylight Saving Bill was first introduced into the British House of Commons in 1908, it was referred to a select committee, which reported that its effect would, *inter alia*, be (*a*) to benefit the physique, general health and welfare of all classes of the community, and (*b*) to reduce the industrial, commercial and domestic expenditure on artificial light. The committee recognized that there was nothing to prevent municipalities adopting the daylight saving plan of their own volition if they chose to do so, but at the same time it pointed out that the maximum benefits from the change could only be secured by legislation that would bring it into effect simultaneously in all parts of the country.

In Canada the experiment has been tried with pleasing success in a number of Western cities, such as Regina, Winnipeg, Saskatoon, Calgary and Edmonton, also in Halifax in the East. This month will witness its adoption in some of the larger places of Ontario. This piecemeal method of application, however, is more likely to impair than to improve its chances of general adoption, because of the confusion to which it will inevitably give rise. For reasons that are quite obvious, the railway companies will always be the last to make the change, and such is our dependence upon them for our means of travel and communication, that their failure to adopt the plan might eventually lead to its entire abandonment.

The so-called standard time upon which our railways operate is after all a matter of convention. Our clocks are simply instruments for marking off hours and minutes, and have not necessarily any fixed relation to solar time, which of course is the only true time. Sir Robert Ball, Professor of Astronomy at Cambridge, says: "Meridians are made for man, not man for meridians." The truth of this statement is exemplified in the fact that even railroad time itself changes an hour in passing from one zone to another, thereby showing that the record our clocks are made to give is more or less arbitrarily fixed. If, therefore, there is any advantage to be gained by carrying this principle a step further and moving the clock forward an hour in the summer season and restoring it to its original position in the winter season, there is no valid reason in science or in economics why we should not do so.

Your Committee have pleasure in recommending, therefore, that the Canadian Manufacturers' Association join in the request that has already been made upon the Government by so many municipal Councils, Boards of Trade and other bodies throughout the Dominion for an Act that will give effect from coast to coast to the principle herein advocated.

Insurance Tax.

The principle of taxing the premiums paid to insurance companies not licensed to do business in Canada has now been adopted by most of our Provincial Legislatures. Regarded purely as a principle, no exception can be taken to it, providing, of course, it is kept within proper bounds, and taxes, without actually prohibiting. Ontario, for instance, places a tax of 1 per cent. on these premiums. In that there is no hardship. Alberta and Saskatchewan, on the other hand, tax unlicensed premiums 50 per cent. Such a tax may not amount to prohibition, but it is not far from it.

While Eastern provinces have so far avoided the extremes to which Western provinces have gone in this respect, one of them, viz., Ontario, has recently resorted to a new form of penalizing unlicensed insurance that should not be allowed to pass unchallenged. By an amendment to the Fire Marshal Act, slipped through in the closing hours of the last session of the Legislature, the insured is now required to pay a tax of 1 per cent. on all claims collected from unlicensed companies. It is an accepted principle of taxation that it should be based upon assets, profits or income, but the effect of this legislation is to recognize losses as a proper basis for taxation. The inherent injustice of such a method is so perfectly

obvious that your Committee would suggest that the Government be asked to have it repealed.

Conclusion.

In addition to the matters herein dealt with, your Committee have had other subjects under consideration, such as Municipal Trading Licenses, Patent Office Reform, Landlord's Preference in Assignments, Inter-Provincial Reciprocity in the matter of Judgments, etc., regarding which they ask leave to report to the Council at a later date.

All of which is respectfully submitted.

G. M. MURRAY, *Secretary.* J. R. SHAW, *Chairman.*

During the reading of the report, referring to the matter of the expenses incurred in connection with the Ontario Workmen's Compensation Act, Mr. Shaw referred verbally to the efforts that had been made to induce the Government to pay the expenses of administration of the Act. A promise had been made that $100,000 would be provided, but it had not been forthcoming.

Suspension of Lord's Day Act.

MR. FRASER, in opening the discussion of the report, again criticized the committee's attitude towards the Lord's Day Act. He did not believe that more work could be done in seven days than in six. It was inserting the thin edge of the wedge, and the Lord's Day might be lost to the country.

MR. MORTIMER joined Mr. Fraser in standing up for the principle of the observance of the Lord's Day, under which the nation had prospered.

MR. HENDERSON, in reply, said that he had been a manufacturer for a great many years but had never manufactured on Sunday. Still he realized that some operations had of necessity to be carried on seven days a week. He added that he thought if he was working on Sunday at the present time manufacturing munitions to help to defeat the tyranny of Germany he would be doing the Lord's work just as much as in any other way.

After several other members had participated in the discussion, the President asked the Secretary for a word or two setting forth some of the reasons why the committee had acted as they did.

THE SECRETARY—"Had I known that the introduction of this clause was going to precipitate such a debate, I could have amplified it in the preparation of the report in such a manner as to have obviated a great deal of discussion that has taken place.

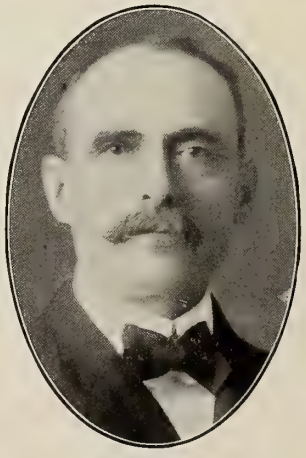
"Clause 12D of the Lord's Day Act, which, if my memory serves me correctly, is Chapter 159, R.S.O., 1908, makes provision for the operation on the Lord's Day of industries involving what is known as continuous processes; it also makes provision for the operation of industries for purposes including necessary repairs and also for the operation in cases of extreme emergency where property and life are endangered. Since the beginning of the war the shortage in Canada or the stoppage of importation into Canada of certain materials has given rise to the establishment in this country of new industries, some of them involving the principle of continuous operation regarding the importance of which the people of this country are not yet educated to. I could point you to an illustration in the Province of Ontario where they are now calcining magnetite, an operation unknown in this country prior to the outbreak of the war. That operation involves continuous processes. The people objected to the operation of the plant on the Lord's Day, there have not been any prosecutions but they have been threatened, and manufacturers have been embarrassed. In making this suggestion to the government, I want to state clearly the committee qualified their application in these ways, first of all they asked for suspension of the Lord's Day Act with regard only to certain industries manufacturing specific classes of munitions of war and war material; in the second place, they asked for suspension during the period of the war only, and in the third place, they stipulated their entire willingness to see that suspension qualified in such a way as to make it entirely harmonious with provincial law in regard to the employment of minors and women. Under this construction it appealed to the committee they were asking nothing unreasonable; on the contrary, it seems they would only be adding to the army in the trenches the strength of the industrial army upon which the military army is so absolutely dependent. With these explanations, which I might possibly have given in more detail in the report, had I thought it necessary, I trust that the objections of these gentlemen will be to some extent lessened so that they can see their way to support the recommendation of the committee."

MR FRASER—"It was already provided for."

THE SECRETARY—"I might say that that particular clause in the Lord's Day Act to which I have made reference, clause 12d, leaves the onus of proof that these operations are continuous and that repairs are necessary and that the emergency actually exists upon the manufacturer, and the cases have been quite numerous; in fact the intervention of the Association has been repeatedly asked in order to back them up in a statement that would result in the withdrawal of the threatened prosecution by the Lord's Day Alliance."

THE MEMBERSHIP FEE.

A great deal of discussion took place at the Hamilton Convention on the subject of the membership fee in the Association. Some members advocated raising the minimum to $15. Others held that the minimum fee of $10 should be retained. All were agreed that the Association needed more revenue. After several motions and amendments had been moved, the meeting decided to adopt a plan suggested by the Secretary. This was to the effect that a small booklet explaining the work of the Association should be prepared and sent to the members, with a circular letter, asking for an expression of opinion relative to a rearrangement of the schedule of fees. The minimum fee of $10 would be left, but possibly the number of employers to which that fee would apply would be reduced.



W. H. SHAPLEY

Sterling Actions & Keys, Limited, Toronto

Elected Chairman, 1916-17, Insurance Committee, C.M.A.

TARIFF

THE report of the Tariff Committee was presented by the chairman, Mr. George W. Watts, who, after reading it, moved its adoption.

Since our last annual meeting there has been practically no alteration of the Customs Tariff. A readjustment of the duty on apples and on certain mineral oils, requiring three new tariff items, which substitute straight specific duties for ad valorem and mixed specific and ad valorem duties, constitute the only changes. Details of these changes appear in Appendix "B" of this report.

This rigidity of the Canadian tariff was a general characteristic of the tariffs of the world during the past year, as nearly all belligerent countries resorted to special Customs levies in the first year of the war for the purpose of securing additional revenue, and similar action was forced upon many neutral countries.

Such limited tariff movement, however, does not reflect absence of keen interest in the relation of commerce to tariffs. Never in commercial history has been witnessed such widespread and earnest study of the application of Customs preferential tariffs designed to maintain and expand foreign trade. The consideration of these matters has already carried events so far as to indicate that the British Empire, including its self-governing Dominions, will not return to the tariff and trade arrangements which preceded the war; and it is highly probable that one of the results of the war will be adjustments in most Customs tariffs for the purpose of developing commerce. Your Committee believes in an Imperial tariff policy which will result in facilitating economic exchange of materials among the various parts of the Empire, which will favor and promote trade among British countries, and which will develop raw materials within the Empire by "home" industry to the final stages of manufacture.

This commercial tariff movement is not confined to British countries. Representatives of the allied nations are at present discussing proposed methods of facilitating commerce among themselves and neutral countries to the exclusion of hostile commerce after the conclusion of the war, and of constructing reciprocal tariffs which will safeguard and develop their trade.

The belief that Germany and Austria are preparing to follow the war of arms by a war of trade with the same unscrupulous thoroughness, which has marked their violations of international law and of treaty obligations, the evident determination of Germany to ensure a close Customs union with Austria and with whatever is left to her of the Balkans and Turkey, and, on the other hand, the bond of union between the Allies, cemented by their singleness of purpose and common sacrifices, will all tend to ensure that trade alliances following the war will be broader than our Empire and will result in preferential trade among the allied nations and their Dominions and Colonies.

In Great Britain a sub-committee of the advisory committee of the Board of Trade on Commercial Intelligence, many Chambers' of Commerce, and the Associated Chambers of Commerce have recorded their advocacy of scientific preferential Customs tariffs for reciprocal trade promotion.

Your Committee believes that no other single policy would better promote and develop Canadian industries and enable manufacturers to bear, through export trade, their fair share of the burden of the country's foreign indebtedness. To that end the following resolution has been adopted by your Tariff Committee and approved by the Executive Council:—

WHEREAS it is generally recognized that the war, in which Canada, as part of the British Empire, is now engaged, owes its origin to the ambitions of Germany to dominate the world;

AND WHEREAS we firmly believe that Great Britain and her Allies can and will defeat the military aspirations of Germany, regardless of the sacrifices that may have to be endured in attaining that object;

AND WHEREAS we also believe that the complete and final suppression of the German menace will only be achieved when it is placed beyond the power of Germany to recover the foreign trade which she has temporarily lost;

AND WHEREAS a great part of that trade has been conducted with countries that are now allied with Great Britain against her, and that therefore should have a common interest in insuring the completeness of her overthrow;

AND WHEREAS it would seem to be feasible for the Allies, by means of Customs tariffs and otherwise, to reserve their great consuming markets for their mutual enjoyment, and to the exclusion of the enemy, thus serving the double purpose of hastening their own economic recovery while retarding that of the Central Powers;

THEREFORE BE IT RESOLVED that the Executive Council of the Canadian Manufacturers' Association place itself on record as of the opinion that, so as to maintain and increase our trade after the war, there should be consummated with as little delay as possible;

1. A series of preferential tariffs between all parts of the British Empire that will give the greatest practical encouragement to inter-imperial trading.

2. A series of reciprocal tariffs between all nations that are allied against the Central Powers in the present struggle, by means of which the trade of the countries concerned will be conserved as far as practicable for their mutual enjoyment.

3. An agreement among all the Allies to give favorable tariff treatment to neutral countries.

4. An agreement among all the Allies to subject the products of the Central Empires to such surtaxes and other disabilities as will effectually restrict their competition in the markets of the Allies.

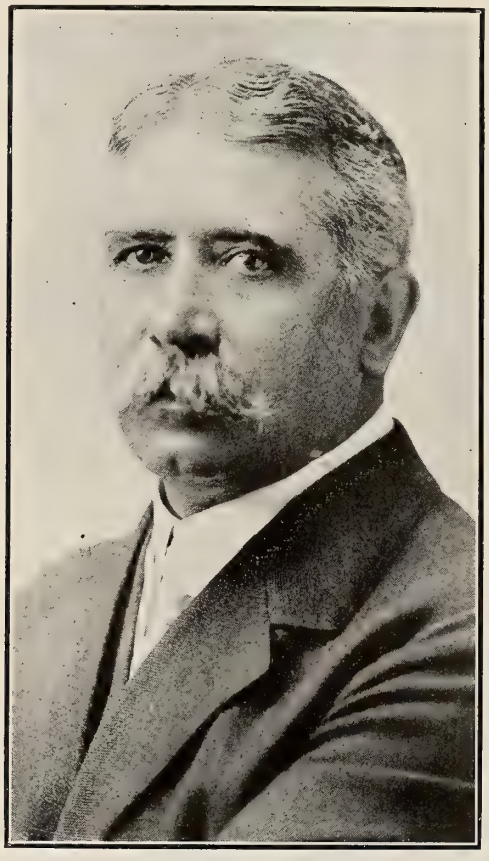
FURTHER RESOLVED that a copy of this resolution be transmitted to the Federal Government.

Imported Materials for Canadian Industry.

Any well-considered system of preferential tariffs must ensure that "home" industry shall not be subjected to higher duties on materials, not obtainable in Canada or within the Empire, than on imports of products manufactured from such materials. Important examples of such unintentional Customs discriminations against Canadian industrial development appear in the existing tariff. To prevent similar discriminations

under new and more widely extended preferential and favored nation tariffs, will require careful investigation by our members into the sources of necessary materials. We believe this can be done best by conferences of representatives of each industry. Therefore, when it is known definitely that new preferential and favored nation tariffs are to be drafted, your Tariff Committee recommends that each group of Canadian manufacturers interested in the production of similar manufactured articles, should hold meetings and confer with the manager of the Tariff Department to consider how they may be affected.

Another problem will arise where German products enter a neutral country, are there advanced in manufacture, and thence are shipped into Canada as being the neutral country's products. In such a case, if our country had a prohibitory



GEO. W. WATTS
Canadian General Electric Co., Limited, Toronto
Retiring Chairman, Tariff Committee.

tariff against the German materials or products, Canadian manufacturers might suffer discrimination in their own home markets in competing with imports from friendly neutral countries.

Enlarging Canada's Trade.

Your Committee believes that all the self-governing countries and dependencies of our Empire should be organized commercially along the same thorough lines in executive and other departments, as the most efficiently managed mercantile, railroad, or manufacturing corporation. That is the model which Germany has set before her; and that is the system to which the present great military struggle appears to be driving the British Empire. While every other object must be subordinated to defeating our enemies' armies, there is no reason why commercial organizations should not now be perfected to retain the volume of Canadian export trade which has been developed since the beginning of hostilities.

The following table shows how the balance of trade has been altered in Canada's favor since the opening of the war:

Comparison of Canada's Total Imports Exclusive of Bullion; and of Canada's Total Exports Exclusive of Bullion and Foreign in Bond Goods:

	1913.	1914.	1915.	1916.
Imports	$670,000,189	$618,328,874	$455,371,371	$507,783,361
Exports	355,754,600	431,588,439	409,418,836	741,610,638

Comparison of Canada's Export of Domestic Manufactures Exclusive of Certain Manufactures of Agricultural Products and of the Forest, Fisheries and the Mine.

	1913.	1914.	1915.	1916.
Manufactures	$43,692,708	$57,443,452	$85,539,501	$242,034,998

Comparison of Canada's Exports of Domestic Products of Agriculture:

	1913.	1914.	1915.	1916.
Agriculture	$150,145,661	$198,220,029	$134,746,050	$249,661,194

Comparison by Months of Exports of Canadian Manufactures Exclusive of Manufactures of Agricultural Products and of the Forest, Fisheries and the Mine:

	1913.	1914.	1915.	1916.
January	.....	$5,050,999	$7,769,146	$47,015,283
February	$3,950,830	4,674,709	8,982,639	28,606,680
March	4,993,695	6,239,290	15,600,790	47,013,766
April	3,478,598	4,295,199	13,221,658	21,573,078
May	4,202,439	5,997,277	16,121,149	.....
June	3,863,536	5,529,021	9,757,146	.....
July	4,507,322	5,857,996	12,441,428	.....
August	4,911,478	5,049,472	10,690,464	.....
September	5,041,465	5,188,314	9,244,974	.....
October	5,032,608	7,131,445	12,880,731	.....
November	4,841,922	6,376,500	13,231,022	.....
December	5,599,086	7,761,702	21,810,697	.....

It must be remembered that the above increases in our export trade in "Manufactures" are constituted largely by sales of war munitions and supplies. When the demand for these articles ceases at the conclusion of peace, how will the present volume of exports be maintained?

Wisely arranged preferential tariffs now being called for in British and allied countries should be an integral part of any such commercial policy. But why should not the outer parts of the British Empire, the self-governing dependencies, be able to utilize to the highest extent all the advantages which the heart of the Empire enjoys for the prosecution of foreign trade? By according banking arrangements in foreign countries, Germany facilitated the extension of the sales of her products all over the world. Representative business men and organizations in the United States are now working to the same end. But with us why should not the banking facilities of the British Empire be united, strengthened and extended, and utilized without favor by all parts of the British Dominions on an equal basis,—as a business man in one of our Provinces now avails himself of the banking facilities of this Dominon?

Need for Consular Service.

The self-governing countries of the British Empire are without direct consular service. Why should not the British Consular offices everywhere be utilized on an equal basis to the fullest extent for the promotion of the foreign trade of all parts of the British Empire? These British consular agents report to London on trade possibilities. If several copies of the reports could be struck and mailed simultaneously to London and also to the self-governing British countries, the advantages of the Empire's consular service would be enormously enhanced for the promotion of the Empire's foreign trade.

Use of Domestic Material.

Another phase of existing conditions which might be improved relates to the "drawbacks" allowed by our government in respect to duty paid on imported materials, which are advanced in manufacture domestically and exported. Under the present regulations the manufacturer may import all his materials and export all his manufactured products and obtain a drawback (equivalent to refund) of 99 per cent. of all the duties paid on the imported materials. Such a regulation, while necessary in order to enable home manufacturers to compete in the world's free markets, wherein trade is met which has been bonused by the customs drawback or subsidy arrangements of other countries, has the effect, very frequently, of stimulating Canadian manufacturers to import all possible materials rather than to use equally serviceable home made materials. The advantages to Canada of such industries lie in the employment given locally to labor and capital, which otherwise would not be employed here, and the greater home market provided for farm, garden and store produce. How very much greater would be those advantages if such industries were enabled to use domestic instead of imported materials.

If the manufacturer for export, when substituting domestic for imported materials, were enabled by an equivalent drawback arrangement to reduce his manufacturing costs to a parity with his manufacturing costs under the present system which allows the drawback of customs duty in respect to imported materials used in Canadian manufactures, exported—instead of being stimulated to import, he would be encouraged to buy Canadian materials wherever possible.

Under Section 286 of the Customs Act the Governor-in-Council is authorized to make regulations for or relating to—

> (1) Granting a drawback of the whole or part of the duty paid on articles which have been used in Canadian manufactures, or granting a certain specific sum in lieu of any such drawback.

Your Tariff Committee believes that this provision for payment of a specific sum in lieu of drawback points the way to correcting that anomoly which now encourages the use of imported rather than domestic materials for manufacturing for export. A specific sum representing the equivalent of drawback of duties on imported materials, as established under the above provision, could be taken as the basis. And, subject to the continuance of the same market conditions, and other safeguards as to determining costs, under which such specific sum is established, the same payment should be continued to the Canadian manufacturer when he substitutes domestic for the imported materials. It is realized that this would require an amendment to the law, and your committee considers it of great importance to the maintenance and expansion of "home" prosperity in connection with increasing foreign trade that such an amendment should be made.

Co-operation for Export Trade.

In seeking export trade, Canadian manufacturers do not avail themselves of one facility which is not denied to them but is denied to United States manufacturers, and that is the right of combination to promote foreign sales. United States manufacturers and statesmen consider such a facility necessary to success in extending foreign trade—not only on the ground of pooling expenses, but because combinations of foreign buyers beyond the reach of United States law in numerous instances are able to fix the price which American goods can command in foreign markets; and, further, that United States manufacturers have to compete in export trade with foreign manufacturers who are encouraged by "home" law, not only to co-operate but who also receive subsidies from their own government in respect to exports. The United States Federal Trade Commission, after investigating these matters, reported that the Sherman law now prevents concerted action by United States manufacturers in export trade, and that instead of such inhibition, co-operation should be encouraged. In view of these conditions, Secretary Redfield, of the Department of Commerce and Labor, has recommended the enactment of legislation to sanction co-operation of manufacturers in seeking export trade. Your committee commend this question of co-operation in export trade enterprises to the careful consideration of the Association's members.

It is the feeling of your committee that Canada and the Empire must develop the highest degree of commercial organization in order to prosper under the trade conditions which are bound to face us very soon.

Australian Preferential Tariff.

The Tariff Committee has frequently urged upon the Federal Government the desirability of putting forth every possible effort to procure the privileges the Australian British Preferential tariff by granting to Australia the preference, extended under the tariff of Canada to certain other British countries, which is at present denied to Australia.

War Measures Embargo Against Exports.

Within the year numerous additions have been made to the list of prohibited exports. These prohibitions are designed to assist in protecting the Empire's needed supplies. But it is not the will of the authorities that the prohibitions against exports, under the War Measures Embargo, should cause avoidable loss to any domestic industry; and relief should be obtainable in deserving cases where a permit or license to export will not assist the enemy nor detract from efficiency in the furnishing of supplies for the Empire's prosecution of the war. The advice of your Tariff Committee is at the disposal of any member of the association who feels that he has a case which comes within these limits.

Exports of Manufactured Tobacco.

Following the representations of the Association's Tariff department before the Inland Revenue department for a modification of the rules which only allow tobacco to be manufactured in bond for export conditional on the establishment of a separate bonded factory and the employment of a separate excise officer at a salary of $600 per annum, the Department of Inland Revenue modified the regulation so as to permit of a room being partitioned off from the remainder of the existing factory, in which to manufacture tobacco for export with the privilege of the one excise officer looking after the two bonds. The amended regulation is as follows:

"The Department will, as respects any licensed manufacture, permit a portion of the licensed premises to be partitioned off from the remainder of the factory for the manufacture, in bond, of the tobacco intended for export. The compartment thus partitioned must be completely closed, with the exception of the doors necessary for communication with the other portion of the factory. For this purpose double doors must be employed, one for use during the day, the other to lock up this portion of the factory at night. The door first mentioned must be a screen door secured by Crown lock, which can, in case of necessity, be easily broken from the inside, so that, in case of fire or accident the employees may escape without difficulty.

"All raw leaf to be used for the manufacture of the goods intended for exportation shall be removed directly from the raw leaf bond to this compartment, and shall not be removed therefrom except in a manufactured state or for return to the raw leaf bond.

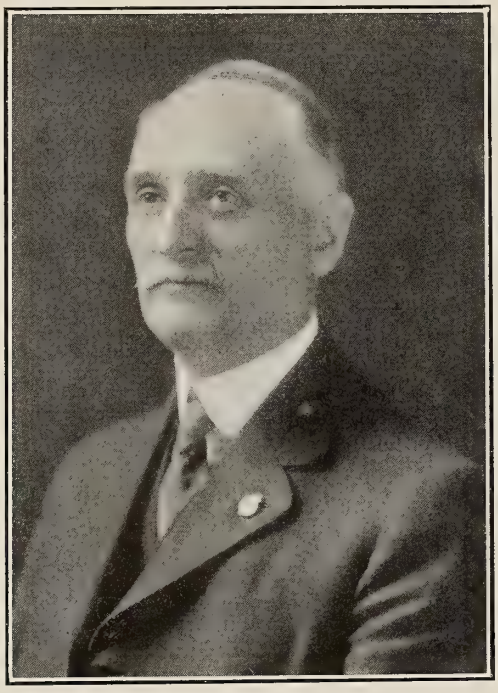
"So soon as the process of manufacture of tobacco intended for export has been completed the raw leaf and other dutiable

raw material will be returned to the bond as already stated, the manufactured product exported, and the portion partitioned off may then be used as at present.

"The license fee will be $300 per annum, but no charge will be made for officer's supervision provided that the services of an additional officer are not found to be necessary."

The United Kingdom's Prohibition Against Imports.

To conserve ocean shipping space for necessary munitions and supplies, the United Kingdom has prohibited the importation of numerous products. It is certain that further similar restrictions will be made. These prohibitions have an appreciable effect in retarding exports of Canadian manufactures in lines other than war munition and supplies. Full information on these proclamations as issued from time to time appear in *Industrial Canada*. Where such orders have



GEORGE H. DOUGLAS
Thornton & Douglas, Limited, Hamilton
Elected Chairman, Tariff Committee, 1916-17.

the effect of cutting off promising new export business, which might become permanent, it is recommended that consideration should be given to the possibility of making successful application to secure from the United Kingdom license to import. Applications for such license should be addressed to Sir W. Guy Grant, Controller, Department of Import Restrictions, 64 Victoria Street, Westminster, S.W., United Kingdom.

Customs Rulings.

The Tariff Department has reported the customs rulings which will be found in Appendix "A," all of which have received the consideration of your Committee. Members of the association who were affected by these tariff ratings were written to and in addition full announcements thereof were made in *Industrial Canada*.

Special Tariff Information.

Your Committee has complete files on the Tariffs and Customs regulations of each British colony and foreign country; and information on these subjects can be secured at any time from the Association's Tariff Department by members who are engaged in foreign trade or who purpose engaging in foreign trade.

Drawings and Refunds.

The Tariff Department of the Association can furnish members interested with full particulars regarding the customs drawback regulations and refunds.

The services of the Manager of the Tariff Department of the Association are wholly at the disposal of any member who may believe that customs officers misinterpret the customs law or regulations dealing with rates of duty, values for duty, refund claims on account of duties overpaid through error, or any other customs matter.

Respectfully submitted.

G. M. MURRAY, *Secretary.*
GEO. W. WATTS, *Chairman.*
J. R. K. BRISTOL, *Manager.*

APPENDIX "A."

Board of Customs Decisions.

Babbit's Cleanser, per sample, containing 2½ per cent. soap, declared to be dutiable under tariff item 252.

Warnock's Adjustable Aluminum Bases, per sample, for electrotypes, declared to be dutiable under tariff item 433.

Balopticons, Stereopticons, etc., may be entered free of duty when imported for use as provided in tariff item 696, provided the selling price of the articles by retail in Canada be not less than $25, in effect from April 1st, 1915.

Custard Powders, not containing sugar, declared to be dutiable under tariff item 141.

Metropolitan Life Insurance Literature, viz.: *"Intelligencer"* published twice a month and distributed to agents; pamphlets, such as "The Visiting Nurse Servia," "Diphtheria," and the like. The above declared to be dutiable under tariff item 171, as periodicals and pamphlets n.o.p.

Declared that *semi-autoplate machines* are entitled to entry under tariff item 441 in effect from the 13th May, 1913, item 441 provides for free entry except as to the war tax.

Sample described as *marl*, claimed by exporter to be calcareous tufa, from the Internation Agricultural Corporation, Inc., (Celedonia Marl Branch), Buffalo, is held to be lime carbonate and declared dutiable under tariff item 663.

Tariff status of bags, ordinarily used as covering for goods subject to a specific rate of duty or free:

> "Declared that *jute* bags, may be rated for duty as usual coverings, under tariff item 710 (a), when imported in the form of covering for corn, corn meal, barley, oats, flaxseed, peas, beans, peanuts, wool, coal and sugar, if such coverings appear appropriate for use in such importations and not to be regarded as designed for other use, when imported containing such articles."

"Cyclopedia of Law and Procedure" declared to be dutiable under tariff item 171 when the property of individuals. Under item 171 the British preferential tariff is five per cent. and the general tariff rate ten per cent. ad valorem.

Duty on Leghorn and Panama Hoods, per samples, which have to be sized, bleached, blocked, filled and buffed after importation, not regarded as "unfinished" but declared to be dutiable under tariff item 711, in effect from 1st November, 1915. Under item 711 the duty payable under the British preferential tariff is 15 per cent., and under the general tariff 17½ per cent. ad valorem.

Literature published by American Council of International Conciliation and not for sale may be entered under tariff item 174. Under tariff item 174 free entry is permitted.

The Board of Customs have cancelled all prior rulings relative to firebrick and substituted the following:

Declaration of Board of Customs, Ottawa, December 20th, 1915, in re item 281, Customs Tariff, 1907.

That the following firebrick shall be rated as a class or kind not made in Canada, and admitted free of duty, viz.:

(1) Rectangular firebrick of nominal dimensions, 9 in. by 4½ in. by 2½ in., valued at more than $16.00 per 1,000 at the place of export.

NOTE—Brick exceeding the above by not more than ¼ in. in any dimension may be included.

(2) Rectilinear brick of fire clay not over 9 in. long, not over 4½ in. wide, not over 2½ in. thick, valued at more than 23½c. per 100 lbs. at the place of export.

(3) Magnesia firebrick.

(4) Chrome firebrick.

(5) Silica firebrick when composed of not less than 90 per cent. silica.

Hydrated Lime, declared dutiable under tariff item 293 as prepared wall plaster. This changes the general tariff rate from 25 per cent. ad valorem to 12½c. per 100 lbs. and 7½ per cent. ad valorem.

Material in Continuous Web, narrowed, marked, or having fringed spaces at necktie length (being in effect neckties) is not entitled to entry under tariff item 765, this ruling to be in effect from the February 15th, 1916.

Imported Glass Bottles containing confectionery, dutiable at the same rate as if imported empty.

Imported Printed Wrappers, as per sample, dutiable under item 178 at 15c. per lb., and 7½ per cent. ad valorem, general tariff.

Flexible Metallic Tubing of brass or copper, in lengths of not less than 6 ft. Item 348, 7½ per cent. general tariff.

Cobblers' Wax for waxing thread, item 711, general tariff rate 17½ per cent. and 7½ per cent ad valorem.

White Cotton or Linen Embroidered Articles of women's or children's wear which are simply cut out following the lines of the embroidered work, per samples and not further manufactured or marked, ruled to be dutiable under tariff item 526; rate of duty under general tariff 20 per cent. ad valorem.

Nujol, per sample, being refined mineral oil for medical purposes, declared to be dutiable under tariff item 274 at 25 per cent., general tariff plus the war tariff.

Straps of Leather, per samples, without buckles, adapted to be made into ladies' belts. Declared to be dutiable under tariff item 612, at 30 per cent. general tariff plus the war tariff.

Puttees, per sample, manufactured from knitted material. Declared to be dutiable under tariff item 567, at 35 per cent. plus the war tariff of 7½ per cent.

Inland Revenue.

Malt for the Manufacture of Pharmaceutical Malt Extract. Ruled free of excise, subject to approved license of the factory.

Departmental Rulings.

Vitrolite or Opalite Glass Plates ruled to be dutiable as plate glass under items 320, 321 and 322. Vitrolite or opalite glass plates polished on one or more edges for use as tops of tables, counters or other furniture, item 519, as parts of furniture.

Stools for Ingot Moulds, the same being in reality bottoms for the ingot moulds and which form an integral part of the ingot mould, item 456, general tariff rate 10 per cent.

Crushed Lime Stone, being the product of crushing machinery declared to be dutiable under tariff item 711. Under item 711 the general tariff rate is 17½ per cent. ad valorem.

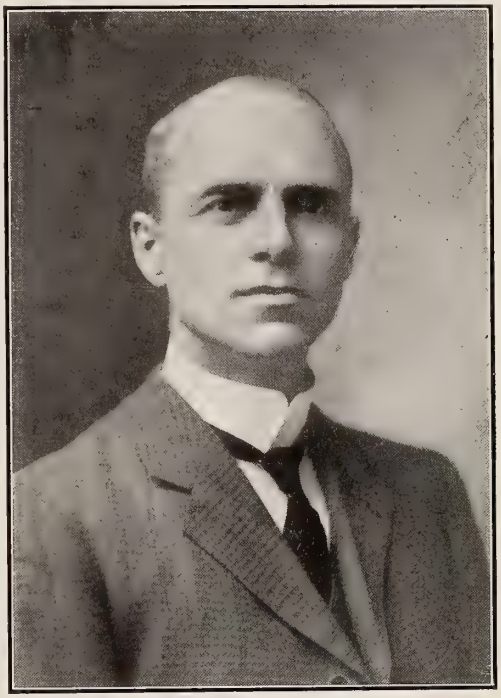
Smith Motor Wheels ruled to be dutiable under tariff item 438. Under tariff item 438 the general tariff rate is 35 per cent. ad valorem.

Creosote Oil, per sample, ruled to be free of regular duty as being "heavy oil."

Corduory, per sample, when for use in covering the outside of books, ruled to be free of regular duty under tariff item 531.

Steam Towing Winches are now manufactured in Canada by the Corbet Foundry & Machine Co., Limited, of Owen Sound, Ontario, and are therefore not entitled to entry under tariff item No. 470.

Split Earthenware Conduit lined with asbestos, ruled to be dutiable under tariff item 288. Under tariff item 288 the general tariff rate is 30 per cent. ad valorem.



J. R. K. BRISTOL
Manager, Tariff Department, C.M.A.

Rough Lenses. Glass plates or discs for lenses may be regarded as only rough cut or unwrought, and subject to entry under tariff item 759, when the surface has not been "ground" or polished on either side and the edges only rough ground (or rough cut). In effect from October 1st, 1915. Entries, therefore, claimed to be free under item 759 should contain a description as above outlined written on the face thereof by the importer. File No. 68997.

By the provisions of tariff item 759, free entry is allowed except for the war tax of 7½ per cent. general tariff, which of course applies upon all such importations.

Fabric called "*Buckramette*," per sample for the manufacture of hat and bonnet shapes, ruled under tariff item 638 at the duty of 7½ per cent. general tariff.

Vitrolite or Opalite Glass Plates, if not drilled and fitted or polished on the edges, when for use as tile in the manufacture of refrigerators and the like. Item 326 a, dutiable at 22½ per cent. general tariff and 7½ per cent. war tax.

Dr. Rohm's Oropon C. Bate. Ruled under tariff item 203, duty under general tariff 7½ per cent.

Tapes of Cotton or Linen, not over 1¼ in. in width, not including measuring tape lines, dutiable under the general tariff at 35 per cent. ad valorem, with an additional 7½ per cent. ad valorem war tax.

Wizard Wax, for waxing floors ruled under item 711.

Garments made from fabrics composed wholly or in part of wool would be dutiable under the provisions of tariff item 567 at the rate of 35 per cent. ad valorem, when imported under the general tariff with an additional 7½ per cent ad valorem war tax.

Garments made from fabrics composed of cotton or linen, and silk, the silk being the component material of chief value, would be dutiable under tariff item 583 at the rate of 37½ per cent. ad valorem when imported under the general tariff.

Garments made from fabric composed wholly of cotton or linen, or of cotton or linen and silk, the cotton or linen being the component material of chief value, would be dutiable as "cotton clothing" under tariff item 575 at the rate of 35 per cent. ad valorem when imported under the general tariff, with an additional 7½ per cent. ad valorem war tax.

Manifesting of Bonded Goods for Mimico, Ont. Bonded goods consigned to Mimico and transported as freight by Canadian Pacific Railway or Grand Trunk Railway may be manifested on the Port of Toronto, Mimico Station. When the manifests are so marked the bonded goods may be delivered at Mimico, subject to entry at Toronto Custom House.

Boilers declared not to be "machinery" when imported without the engine.

Feed Molasses, testing over 35 degrees by the polariscope when imported direct from the place of production, declared to be dutiable at 3 cents per gallon under item 136.

Hosiery Dryer, per illustration and description for drying socks and stockings after same come from the dyeing machine, declared to be dutiable under item 468, being of a class or kind not made in Canada. Under item 468 duty is 10 per cent. ad valorem, plus the war tax.

Diamond Hand Tool, as illustrated and described, used for dressing abrasive grinding wheels declared to be dutiable under item 711. By the provisions of item 711 the duty payable under the British Preferential Tariff is 15 per cent., and under the general tariff 17½ per cent. plus the war tax.

Cylinder Rasps, for the repair of cylinders of threshing machine separators, declared to be dutiable under item 447. By the provisions of item 447 the duty payable under the British Preferential Tariff is 15 per cent. and under the general tariff 20 per cent., subject, of course, to the additional duties payable under the war tariff.

Opalite and Vitrolite Tiling. In large dimensions not ground on edges, declared to be dutiable under tariff item 326 (a). By the provisions of this item the duty payable under the general tariff is 22½ per cent. ad valorem, plus the war tax.

Cyanide of Sodium, for reducing metals in plating operations, free under item 208, except for the war tax.

Small paper packages containing tea, which have to be destroyed to get at contents, entitled to entry as usual coverings when containing tea entitled to free entry. If tea is subject to duty, such packages would be dutiable at same rate as tea unless the value was separately stated on invoice. in which case dutiable at 20 per cent. general tariff, under tariff item 710 (b).

Referring to Appraisers' Bulletin No. 736½, the following articles are considered not entitled to entry under tariff item 696; soil augers, soil sample cans, sample carrying outfits, pruning shears, germinating boxes, pruning saws, pruning knives, grafting chisels, surveyors' chains and similar articles. As item 696 is a free item it will be observed that the foregoing articles are excluded from the privilege of free entry.

White Cotton Embroideries, cut to shape and without neck bands thereon, per samples, to be used to form collars for ladies' garments, dutiable under item 526. By the provisions of item 526 the duty payable under the British Preferential Tariff is 12½ per cent., and under the general tariff 20 per cent. ad valorem.

Thermographs, dutiable under item 657. By the provisions of item 657 the duty payable under the British Preferential Tariff is 17½ per cent., and under the general tariff 25 per cent. ad valorem.

Foster Pressure Regulators, if substantially iron or steel, dutiable under item 453. By the provisions of item 453 the duty payable is 15 per cent. under preferential tariff, and under the general tariff 27½ per cent. ad valorem.

Westinghouse Air Springs (Automobile Shock Absorbers), dutiable under item 454. By the provisions of item 454 the duty is 20 per cent. preferential tariff, and under the general tariff 30 per cent. ad valorem.

Lubricating Oil, Brushes, Oil Cans and screw drivers, when imported along with cream separators, to be used in the operation thereof, dutiable at the same rate as if imported separately.

NOTE.—The above items, Numbers 711, 526, 657, 453, 454, are also subject to the war tariff of 5 per cent. British Preferential, and 7½ per cent. general tariff.

Pulp Colors, made into a paste with size or water, item 711, general tariff rate 17½ per cent., plus the war tariff of 7½ per cent.

Ball Bearings, declared dutiable under item 453, general tariff rate 27½ per cent., plus the war tariff of 7½ per cent.

Tariff Item No. 577.—Ruled to include usual silk yarn required in the manufacture of silk labels.

Curled Hair, per sample—Ruled to be dutiable under item No. 644, at 12½ per cent. British preferential, and 20 per cent. general tariff, and subject also to the war tariff

Felloes of Hickory or Oak, planed on one or more sides, and bent to shape, ruled dutiable under tariff item No. 506. By the provisions of tariff item No. 506 the general tariff rate is 25 per cent. The addition of the war tariff makes the rate equal to 32½ per cent. ad valorem.

Staves, per sample, not being oak or poplar, ruled free under item No. 503.

Iron Tanks for Metallurgical Processes (per blue prints)—Ruled to be dutiable under item No. 454. Under this item the general tariff rate plus the war tariff equals 37½ per cent. ad valorem.

Mixed Dyed Wool Waste, per samples—Ruled free of regular duty under item No. 681.

Flat Strip Steel, cold rolled, per sample—Ruled to be dutiable under item No. 384, at the general tariff rate of 5 per cent. plus the war tariff of 7½ per cent.

Dumping Duty.

Differential Pulley Block, ruled to be exempt from duty as being a class of articles not made in Canada.

Boot Hooks (metal)—Ruled to belong to a class of goods made in Canada, and to be subject to the operations of the dumping clause.

The following orders issued by the Commissioner of Customs to collectors are of special interest to manufacturers, viz.:

Milk Cans.

An Order-in-Council was passed on the 10th June, 1915, amending the regulations governing the inspection of milk and cream cans, and the Department of Inland Revenue has requested that Customs Officers be required to notify the nearest Inspector of Weights and Measures on W. & M. Customs Form O. 3 of every shipment of milk and cream cans imported into Canada, stating the quantity, and name and address of the consignee.

Such notification is not required in respect of cans entering Canada to be immediately filled and returned, when used for local trade in the United States.

You are instructed to notify the Inspector of Weights & Measures accordingly when such shipments are brought in at your port.

Exportation of Magnetos for Repairs.

Referring to Memo. No. 1916-B, you are advised that you may issue licenses for the exportation of magnetos to the United States, to be repaired and returned to Canada. (July 23th, 1915).

Item 1212, Schedule "C" Customs Tariff.

Your attention is recalled to the above tariff item classing as prohibited importation into Canada aigrettes, agret plumes or so called osprey plumes or parts of skins of wild birds, either raw or manufactured, except as in said item provided.

Complaints have been made by dealers that goods prohibited importation under this item have been brought into Canada on trimmed hats from the United States and sold to milliners in Canada.

You are requested to exercise especial vigilance in this regard and report seizures on Form K-9, of any such importations.

Importation of Dried Apples.

Complaints have been received that large quantities of dried apples are being imported into Canada which do not conform to the standard established by the Department of Inland Revenue.

You are instructed not to deliver such goods until the same have been examined by the proper officers of the Department of Inland Revenue.

In the event of dried apples being imported at your port, you are directed to at once notify the nearest Inland Revenue officer, detaining the goods until advised that they may be released.

Trading With the Enemy—Shipments From Switzerland Routed Through Germany.

It has come to the notice of the department that in some instances exporters in Switzerland have routed shipments for Canada through Germany to a port in Holland. As it is considered that this would constitute a violation of the proclamations relating to trading with the enemy, you should direct the attention of firms who import from Switzerland to this fact, so that they may caution exporters in Switzerland against shipping goods to Canada through Germany.

When the bills of lading or other shipping documents show that goods exported from Switzerland have been laden on board vessels at Rotterdam or other ports in Holland, it may be assumed that such goods have been carried through Germany.

Any such shipments arriving at your port are not to be allowed delivery without instructions from the department.

Mr. Champ, in a short speech, seconded the adoption of the report, which was carried by the meeting.

APPENDIX "B."

Tariff Changes, 1916.

The following Customs Tariff changes are effective on and after February 16th, 1916:

		New Tariff Rates.			Former Tariff Rates.		
Tariff Item.		British Preferential Tariff.	Intermediate Tariff.	General Tariff.	British Preferential Tariff.	Intermediate Tariff.	General Tariff.
92	Apples, per barrel	60c.	90c.	90c.	25c.	35c.	40c.
267	Oils, petroleum, (not including crude petroleum imported to be refined or illuminating or lubricating oils), .8235 specific gravity or heavier at 60 degrees temperature, per gallon.	⅓c.	½c.	½c.	Refined 1½ cts. per gallon; fuel and gas oils, 5 per cent.	Refined 2½ cts. per gallon; fuel and gas oils, 7½ per cent.	Refined 2½ cts. per gallon; fuel and gas oils, 7½ per cent.
267a	Crude petroleum in its natural state, .7900 specific gravity or heavier at 60 degrees temperature when imported by oil refiners to be refined in their own factories	5%	7½%	7½%	Former rate on .7900 specific gravity but under .8235, 1 ct. per gallon and 5 per cent. ad valorem; otherwise 5 per cent.	Former rate on .7900 specific gravity but under .8235; 1¼ cts. per gallon and 7½ per cent. ad valorem; otherwise 7½ per cent.	Former rate on .7900 specific gravity but under .8235, 1½ cts. per gallon and 7½ per cent. ad valorem; otherwise 7½ per cent.

The above items are exempt from the Customs Tariff War Revenue Act, 1915.

SAFETY FOR THE OFFICE MAN.

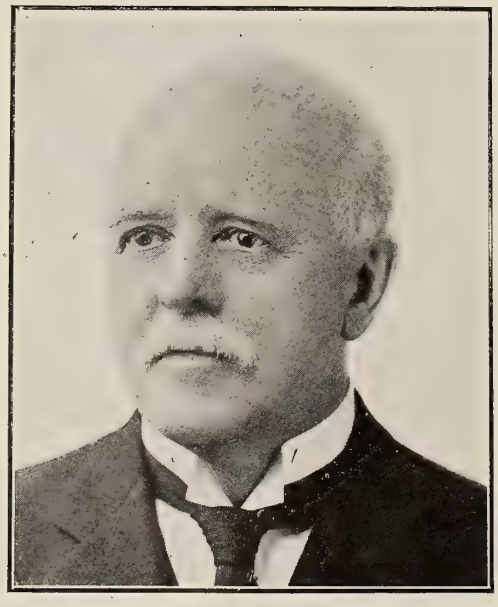
The Manitowoc Shipbuilding and Dry Dock Company thinks that its office help needs guarding as well as its shop employees, though in a different way. A warning printed in its employees' publication reads as follows: "Have you ever stopped to think that the safety movement applies to the office man as well as to the workman? There is merely a difference in the chance of accident. The possibility of an injury to an office man is not as great as that to the workman, but this difference is offset in other ways. The office employee is indoors day after day, year after year. His mind may be active, but his muscles become soft. He does not get proper exercise nor sufficient fresh air. Without exercise and without fresh air the body is weakened. It cannot resist the disease germs; it is more liable to cold, pneumonia and other diseases. Therefore 'Safety First' to the office man means that he must keep his health; he must have exercise, must sleep with his windows open. Without health he is unable to produce efficiently and his job gradually becomes too big for him. Everybody should think and practise 'Safety First.' There are no exceptions, either in the office or shop. The sooner this is done, the sooner will the number of accidents decrease and healthful living conditions will exist."

TRANSPORTATION

TRANSPORTATION is one of the most important questions before the Association to-day. Developments are taking place in the readjustment of freight rates and in the great problem of the future of our railways which will seriously affect economic conditions in Canada. At the last Annual Meeting a resolution, carefully prepared and strongly worded, was passed, recommending that the Government appoint a special commission for the purpose of investigating transportation conditions and of making such reports and recommendations as might seem proper. The Government has announced that action will be taken at once and a report made before the next session of Parliament.

In the meantime, owing to the financial position of the Canadian Northern and Grand Trunk Pacific Railways, a cry has been raised for public ownership, which, according to the opinion of those capable of judging, would result in the nationalization of all Canadian railways. As the charter of the Canadian Pacific Railway provides that rates shall not be interfered with until the road earns ten per cent. per annum, the stockholders would undoubtedly look for a guarantee from the Government if it took away their property.

In considering the railway problem, the fact seems to be overlooked that, on two different occasions, the people of Canada endorsed the building of the Transcontinental and the Grand Trunk Pacific. Since these enterprises were begun and carried on with public consent it seems reasonable to suppose that they should continue to receive public support until they are self-sustaining, unless it can be shown that bad management is responsible for the present condition of affairs. Canadian Northern construction was similarly encouraged, not directly by the people, but by their representatives in our legislatures and at Ottawa, with cash and land subsidies, and with bond guarantees that made it possible for the promoters to secure the necessary capital.



J. F. ELLIS
Barber-Ellis, Limited, Toronto
Retiring Chairman, Transportation Committee.
—British & Colonial Press Photo.

Your Committee is, therefore, strongly of the opinion that the Association should take no further action in regard to the future of Canadian railways until the report from the special commission has been made public by the Government.

Ocean Transportation.

Ocean transportation is another problem which your Committee has had to deal with. The enormous increase in freight rates, which has taken place since the outbreak of the war, is compelling national action. The question has received consideration by the Honorable, the Minister of Trade and Commerce. In speeches delivered in the House of Commons during the last session of Parliament, he said:

> "It goes without saying, to my mind, that a country of such large productive capacity as Canada, and with production constantly increasing, occupies an undesirable position if it does not produce and have at command a very considerable commercial tonnage for its own use.
>
> I believe that this argument should go along the line of a country having a good strong commercial marine of its own, and I do not think you can bring that about by leaving the matter entirely to corporate and private enterprise without some form of aid."

No action was taken by Parliament. Whether or not anything will be done during the recess will probably depend upon the representations made by the interested public bodies throughout Canada.

The question of tonnage is receiving the attention of the United States Congress, which apparently intends to create a merchant marine for export traffic.

Steamship men believe that the present high ocean rates will prevail for a considerable time after the war. Several reasons are advanced in support of this theory: First—vessels will be engaged in bringing troops home; Second—the need of ships to re-provision Europe; Third—the destruction of ocean tonnage; Fourth—deterioration in vessels interned; and Fifth—the shutting down of ship-building, and wear and tear on vessels now in use.

Transcontinental Rates.

Steamship Service between New York and Vancouver via Panama Canal.

The position of our members in relation to the Pacific Coast markets has received a great deal of attention from your Committee, and has much improved since the visit of the Second Vice-President of the Association and the Manager of the Department to the Coast in October last year. The readjustment, and, in many cases, the reduction of rates, which followed the conference between the railways and our manufacturers, have greatly improved the situation.

It would be unfair not to mention the fact that the railways approached this question rather with a desire to co-operate in the development of Canadian Industry than owing to the pressure of competition from the Panama Canal. While they have not met our representations in all cases, they have made substantial reductions and have intimated that they are prepared to consider such further representations as it may be found necessary to make. Negotiations are now under

way in respect to certain commodities and conditions of carriage which, probably will be concluded satisfactorily.

The people on the Coast, as well as many manufacturers in the East, are still strongly of the opinion that a Canadian customs' officer should be stationed at the Port of New York so that Canadian goods can be shipped via that port and the Panama Canal, both ways. Although there is not much hope of a regular service being established in the near future from New York to the Canadian Pacific Coast, the opinion is held that the canal can be used to advantage, when finally opened, for certain British Columbia natural products which cannot be moved over the railways. It would seem, however, from what was recently stated in the House of Commons, that no appointment would be made until the investigation into railway matters with a view of re-organizing our railway system had been concluded.

Freight Classification.

The general revision of the Canadian Freight Classification announced at the last Annual Meeting, has not yet come to hand, although your Committee has been informed that it is almost ready for submission.

Copies will be sent to the Transportation Department and to the Board of Railway Commissioners simultaneously. On receipt thereof members will be promptly advised of any changes affecting them.

Although no definite information has been received, it has been intimated that some of the changes contemplated are:

(1) An increase in the carload rating on agricultural implements and machinery from sixth to fifth class;

(2) A curtailment of the right to ship in mixed carloads;

(3) A general increase in carload minimums.

No doubt a number of other changes will be proposed which will require careful consideration.

Audit Department.

Active canvasses of members of the Association are being made from time to time by certain audit bureaus who have established themselves either in Canada or border United States cities. They agree to audit freight bills and advise subscribers upon any subject pertaining to freight transportation, to establish new or lower freight classifications, institute reparation claims, etc.

As changes in classification can only be made through the Canadian Freight Association and are subject to the approval of the Board of Railway Commissioners, it is not clear what assistance in this direction they can provide.

These bureaus thrive upon the carelessness of the railways and the shippers and receivers of freight. So long as the railways continue to neglect to check their billing for overcharges, errors in classification and extensions, and so long as shippers and receivers on their part do not check freight bills, will these bureaus exist. With proper organization there is no particular reason why freight charges should not be checked just as closely as any other accounts payable. Unfortunately, in many cases, checking is neglected owing to alleged difficulties arising out of intricacies of the tariffs and classifications. These obstacles are more or less imaginary and may be easily overcome.

Though the railways claim that they do not favor these bureaus, they have given us no answer to our repeated representations that a thorough check should be kept for overcharges, and when errors are found, that immediate refunds should be made without waiting for claims to be filed. Apparently, they are willing that these bureaus shall continue to flourish at the expense of the shipping public.

A number of members have suggested that the Association should undertake the checking of freight bills. Your Committee has given the question considerable thought, and has come to the conclusion that it would be difficult to establish an equitable service which would be satisfactory to all concerned. The purpose of the Department, when it was created was to act entirely in an advisory capacity. Though it is true that other than advisory services have been rendered by the officials, it is the opinion that any extension which contemplates the assumption of work now done by the clerical staffs of manufacturers might result in an undesirable limitation to the real functions of the Department.

Your Committee is fully alive to the representations made to it throughout the year, and while not in favor of establishing an audit branch of the Transportation Department, it is



JAMES A. RIORDAN
Standard Sanitary Mfg. Co., Toronto
Elected Chairman, 1916-17, Transportation Committee, C.M.A.

prepared to recommend, provided sufficient encouragement is received, that members be advised monthly of all important changes in freight and express tariffs, freight classifications, conditions of carriage, contracts and traffic rulings of the Commission. With this information, members who are not now checking their own freight bills will be placed in a position to do so. The Department will also be at the disposal of those who desire assistance in establishing a checking system.

This additional service would involve considerable expense which would have to be met either by direct subscription or by an increase in the membership fee.

An expression from this meeting for the guidance of your incoming Committee will be appreciated.

Telegraph Enquiry

The Railway Commission has finally disposed of the investigation into telegraph conditions.

In 1901, when the form used in sending messages came before the Commission, we took the position that the companies should be held responsible even in the case of unrepeated telegrams. The Board at that time shared this view, though holding that the liability should be limited so that it would not be altogether out of proportion to the fee collected.

This the Association agreed to, and though no decision was reached, it was tacitly understood that a limitation of from $100 to $200 would be satisfactory to both sides.

Notwithstanding the above, the Board has now ruled:

> "The company shall not be liable for damages arising from failure to transmit or deliver, or for any error in the transmission or delivery of an unrepeated telegram, whether happening from the negligence of its servants or otherwise . . . beyond the amount received for sending same."

In the case of repeated telegrams, the limit of liability under the old contract was fifty times the amount of the combined toll collected. This has now been changed to $200, which is to be a limit, even in cases where the damages arise from negligence.

Another feature of the Board's judgment which favors the Company is the refusal to hold it responsible for its messengers.

During the early enquiry, the late Chief Commissioner asked counsel for the companies whether they would agree with the following interpretation of the law:

> "Telegraph companies have been held, with one exception, to be liable for incorrect transmission and safe delivery of messages only through the negligence of their servants."

He further stated that whilst they are not common carriers, they must serve impartially all who employ them, must use proper machinery, skilled employees, and exercise due diligence in the transmission of messages. So long as this is done they will not be liable for damages, the result of errors made in transmission, but as soon as they are guilty of negligence or wilful default on the part of their employees, and damages arise thereby, they will be liable.

It is the view of your Committee that the courts will be asked to determine the question of negligence.

Time Limit Within Which to File Claims.

Under the conditions of the bill of lading, notice of loss, damage or delay must be made in writing, to the carrier at the point of delivery, or to the carrier at the point of origin, within four months after delivery of the goods, or in case of failure to make delivery, then within four months after a reasonable time for delivery has elapsed. Unless notice is so given the carrier shall not be liable.

It will be observed that claims for loss must be filed within four months. This limitation is being more or less insisted upon in respect to all claims. It is, therefore, suggested that provision be made in the revised Railway Act now before Parliament, that, unless demands for undercharges are filed within the same period, the party from whom the undercharge is claimed shall not be liable, also that some provision be made for a penalty covering the illegal collection and retention of tolls.

Rules Governing Baggage Car Traffic.

The rules submitted by the railways, limited their liability for personal baggage to $100, even if the passenger paid full fare. This was protested, but the Railway Commission, although the courts have held in a number of cases that railways must pay for the value of baggage destroyed, approved of the limitation. On receipt of the judgment the Board was appealed to, and an invitation extended to make such further representations as might be desired. On further consideration it was decided not to take any action for the present.

Eastern Rates Case.

The application of the railways filed early in 1915 and closed, so far as the public was concerned, on June 29th last, has not yet been disposed of. In the meantime, conditions have improved materially. During the past six months there has been a marked increase in the revenue of the carriers compared with the increase in tonnage, and some of the lines have had more business than they could handle.

This condition amply proves one of the statements emphasized before the Board of Railway Commissioners at the time of the application, viz.: "It is possible, too, that the present world-wide depressed conditions affecting all interests are so acutely felt by the railways that temporary conditions are unwittingly magnified to appear as those prevailing in normal times. There should be a distinct differentiation between prevailing conditions and those which might be considered more regular and stable."

There is every reason to believe that the Commission is making careful enquiry into the needs of the applicants; in fact, it was recently announced in the press that certain railway officials had frequently been consulted after the public hearings were closed.

Refrigerator Traffic—Charges for Ice and Salt.

The railways filed tariffs, effective July 20th last, proposing to charge for the salt used in refrigerator cars. We asked the Commission to suspend same, but after a hearing the tariffs were allowed to go into effect on the understanding that the Board would be furnished, inside of six weeks, with information covering the cost of the service. Although repeated requests were made this information was not filed until December, 1915, and only reached your Committee January 31, 1916.

About the same time the railways gave notice that they intended filing new tariffs, not only increasing the charge for ice, but making a charge for hauling it. Strong protests were entered against any action being taken until the packers had been given an opportunity to study the situation and make representations. Our objections were sustained by the Board, and an extension of time granted.

The proposition means a very large increase in the charges for this service, representing, it is claimed, from 10 to 15 per cent. of the freight rates.

Heated Freight Car Service.

The necessity for a regular heated freight car service in the East and West has finally been established, and it is fully expected that satisfactory arrangements will be reached both in respect to carload and less than carload traffic.

Regulations for the Transportation of So-called Dangerous Articles and Explosives.

The Railway Commission was advised at a hearing in Ottawa in February last, that, with certain changes then suggested, there were no objections to the regulations governing the transportation of acids and gases. Objections were filed by the paint, varnish and oil manufacturers, as a result of which the Chairman of the Board stated that in view of the present situation, no restrictions would be placed upon these commodities.

The regulations governing the transportation of explosives, with some slight changes, were agreed to.

Switching—Local.

This question is still with the Railway Commission. As previously reported, the railways consider they are entitled to increased rates for local switching, particularly in the large centres, and the matter has been the subject of several hearings before the Commission. It was suggested to the Board by the Association that the statements submitted by the railways in support of their contention should be properly analyzed by operating experts, and your Committee has reason to believe that this is being done.

Interswitching—Cartage Equalization.

This matter is also before the Commission for decision. The manager of the Department at a hearing in November, 1914, reviewed the whole case at length. The railways asked for some further time to reply, but so far no advice has been received that their case has been filed with the Board.

The question of cartage equalization has, since the last hearing in this matter, come up and been disposed of. The Board has decided that equalization is proper under certain conditions. It has been clearly established at the different sittings of the Board that interswitching is a public necessity and that the Railway Act contemplates interchange either at the point of origin or destination of the traffic. Notwithstanding this, the public has for some time past been denied a service, particularly to and from team tracks. If, therefore, proper interchange facilities were established cartage equalization would only be necessary to a very limited extent, if at all. This view was expressed by some of the representatives of the railways at a hearing in Ottawa in December last. It was also suggested at that time that a charge might be made for switching to and from private sidings, and the Board intimated that the right was specially reserved to the railways to show that they were doing something for nothing. There is no doubt in the mind of your Committee that interswitching is the solution of the cartage equalization problem.

Steamship Service Between Eastern Canada and Australia and New Zealand.

This service, with some difficulties, has been maintained more or less regularly during the past year, although the contract with the Government has expired. Arrangements were made to continue the service indefinitely under the old subsidy. Your Committee has the assurance of the Department of Trade and Commerce that every attention is being given the question with a view to securing an early improvement, but it is doubtful that this can be accomplished, considering the general situation involved. The remedy is the establishment of a service controlled in Canada.

Express Matters.

Charge for Manifests.—A number of complaints have been filed in regard to the charge made by the express companies for making out manifests on shipments to and from the United States. The question is still under consideration, and it is hoped some satisfactory conclusion will be reached.

Proposed Regulations for Shipments in Corrugated Containers.—The manufacturers of these containers have now under consideration through the Department certain rules and regulations governing the use of corrugated containers for shipments by express. There are no such regulations in effect at the present time. It is fully expected that arrangements which will be satisfactory to all concerned will be made.

Proposed Increase—Castings.—The express companies filed with the Railway Commission an increase in the rate on castings, loose or in bundles, and in justification thereof stated that the increase was not proposed for the purpose of securing increased revenue, but rather to insure a better method of shipping. On representations being made that the item as proposed would not accomplish what was sought, the application was withdrawn and the matter is now before the interested manufacturers and the companies.

Wagon Service—Carload Shipments.—An application of the companies to discontinue the wagon service on carload shipments of fish was opposed by your Committee before the Railway Commission. Judgment has not yet been rendered.

General.

Your Committee and the Department have been called upon during the year to deal with a large number of important questions embracing almost every phase of transportation and



J. E. WALSH
Manager, Transportation Department, C.M.A.

have been consulted freely by members both in the West and in the East. The demands for information and assistance are increasing from year to year.

Rates are fixed by law. The law determines the manner of packing, how the shipment will be described and the contract of carriage. It also fixes the responsibility for the payment of tolls in case the consignee fails to hand them over. All these things are covered by tariffs, classifications and orders of the Board of Railway Commisioners, made under the Railway Act. The duties and obligations of the carriers are defined. Every act of a shipper is, therefore, presumed to be done with a full knowledge of the law. The Department is in a position to advise members promptly in all such matters.

Space will not permit special reference to all of the items dealt with during the year, but the summary attached hereto indicates the extent to which the Department is being used.

Summary of Matters Dealt With by Your Committee and the Department During the Past Year.

(*b*) *Baggage*—

1. General revision of rules and regulations.

(*c*) *Conditions of Carriage*—

1. Bulk grain bill-of-lading.
2. Ocean bill-of-lading.
3. Shippers' load and count.

Claims—

1. For overcharge.
2. For pilferage, loss or damage.
3. Checking and disposition of overcharges by railway.

Classification Freight Traffic—

1. Proposed general revision, Canadian Freight Classification.
2. Applications for changes in ratings, etc., in connection with the following: Automobile parts; binder twine; barn and stable equipment; bed springs; biscuits, etc.; boats, canoes, etc.; bronze powders; camp stoves, k.d.; carriage rails (plated); cast iron plugs (for shells); catsup; cobblers' sets; copper kettles; cotton duck (for belting); cheese presses; cotton seed soap stock; cylinders, iron or steel; dry cell batteries; dry measures; electric motors; excelsior pads; fibreboard; field kitchens; filing cases and supplies; fish; flat steel sheets (plain or galvanized); freight delivery wagons or trucks; friction clutches; fruits and jams in glass; glass photo negatives (old); glassware, cut; grape juice and raspberry vinegar; hog hair; licorice; manganese ore; manifolding machines; meats, salted; mixed carloads (application Calgary Board of Trade); meats, fresh, and packing house products; owner's risk; paper excelsior; paper window shading; plowshares and plow parts; pop corn; readi-cut houses; rubber goods; rubber tires; screen door sets; signs; steel barrels, drums and kegs; stump pullers; three-in-one oil; trunks and bags; tungsten lamps; vehicles; veneer; "Wincarnis"; wire fencing.
3. Supplement 5 to Classification 16.

Car Service Rules—

1. Average agreement.
2. Reciprocal arrangement.
3. Extension of free time on certain commodities.
4. Interpretation rule 2.
5. Proposed general revision.
6. Demurrage on privately-owned cars.

(*d*) *Dunnage—*

1. Application of railways to Commission for authority to discontinue making allowances.

Diversion—

1. Charge by railways for change in destination of car after arrival at large terminals.

(*e*) *Embargoes—*

1. On export freight.
2. Refusal G.T.R. to accept shipments consigned to C.N.R. points unless prepaid.

Express Traffic—

1. Changes in classification.
2. Packing conditions for shipments of eggs.
3. Manifest charge.
4. Delivery limits.
5. Restrictions as to shipments in corrugated, pulp and fibreboard containers.

(*f*) *Flag Stations—*

1. Charge for shipments consigned "to order."

(*e*) *Estimated Weights for Shipping Purposes—*

1. Carriages.

(*f*) *Freight Bills—*

1. New form.
2. Prepaid form.

Freight Rates—

1. Engines and threshers, mixed carloads.
2. Joint rates.
3. Transcontinental rates, class and commodity.
4. Ocean rates.
5. Commodity rates on automobiles, k.d.; barrels, wooden; calf meal; castings; meats, macaroni; sand and gravel.
6. Proposed general advance in Eastern Canada, class and commodity.
7. Proposed advance import rates.

(*h*) *Heated Car Service—*

1. Proposed extra charges C.L. and L.C.L.

Holding Cars for Orders—

1. At Cartier.

(*i*) *Icing—*

1. Proposed revision of charges.

Interchange—

1. L.C.L. traffic from G.T.R. to C.N.R. at Lyn, Ontario.

(*l*) *Live-stock—*

1. Form of contract.
2. Disinfecting cars.
3. Charge for return of attendant.
4. Proposed increase rates sheep and hogs in single deck cars from West to East.

(*m*) *Minimum Carload Weights—*

1 Cotton seed oil in tank cars.
2. Continuous loading on flat cars.
3. Light and bulky goods.
4. General revision.

Milling-in-Transit—

1. Proposed rules governing shipments grain and grain products.
2. Reduction stop-off charge in Eastern Canada.

(*p*) *Passenger—*

1. Printing fares on railway tickets.

Parcel Post—

1. C.O.D. shipments.

Pedlar Cars—

1. Shipments of fresh meats and packing house products.

(*r*) *Railway Act—*

1. General revision of.
2. Placing water carriers under jurisdiction of Railway Commission.

Regulations—

1. Governing explosives and inflammable articles.

(*s*) *Shipping Containers—*

1. Wooden boxes for canned goods via "lake and rail."

Siding Agreements—

1. Installation of private sidings.

Steamship Service—

1. Between Canadian Atlantic and Pacific Coast ports, also between New York and Pacific Coast ports via Panama Canal.
2. Between Canada and South America (east coast).
3. Between Atlantic and Pacific Coast ports and New Zealand and Australia.

Storage—

1. Grain in lake port elevators.

Switching—

1. Local switching—proposed advance in rates.
2. Interswitching.

(*t*) *Telegraph—*

1. New contract form.

Transportation Commission—

1. Request to Government for appointment of.

(*w*) *Weighing Carload Traffic—*

1. Allowances from track scale weights for variation.

All of which is respectfully submitted.

G. M. MURRAY, *Secretary.* J. F. ELLIS, *Chairman.*

J. E. WALSH, *Manager Transportation Department.*

Discussion.

The foregoing report was presented and read by Mr. J. F. Ellis, chairman of the Committee, who moved its adoption. After referring to the splendid support accorded him by the other members of the Committee and by Mr. Walsh, Mr. Ellis urged on his hearers the importance of watching very closely the transportation situation during the next session of Parliament.

In seconding the motion, Mr. Riordan took up the item with respect to the establishment of an information bureau, in lieu of an audit department for auditing freight bills, and went on to emphasize the necessity of increasing the Association's revenue in order to provide for such a bureau. He disagreed with previous speakers who had said that the small members were not getting the same advantage from membership as the large members. As a matter of fact it was from the small members that most of the work of the departments came; the bigger manufacturers looked after these matters themselves.

Mr. Brittain, in discussing the report, put in a strong plea for more revenue, so that the work of the transportation department might be effectively enlarged. He felt that there should be a member of the transportation department's staff in Montreal. For his part he was quite willing to pay an extra fee for the service, and he believed that if every manufacturer, who used the department, paid such an extra fee, the monetary difficulty would be overcome.

Mr. Fairbairn congratulated the Committee on bringing forward for consideration the question of public ownership. He believed that it would not be very long before Canada would have to own and control all her railways. Inter-provincial trade had to be encouraged, and it could only be done by Government-owned and controlled railways. He believed it possible for Canada to have a Commission, independent of politics, to control and run the railways.

The report was adopted.

THE DEVELOPMENT OF EXPORT TRADE

Report presented to the Annual Convention of the C.M.A. by the Special Committee on Trade Development

THE report of the Special Committee on Trade Development was presented and read by Mr. H. H. Champ. It ran as follows:—

The Special Committee appointed by this Association on trade development are confronted with a field so wide, problems so intricate, and possibilities so great, that we feel we can well employ the time of this Convention in directing the attention of Canadian manufacturers to a number of very important conditions which are now facing us, and within which are wrapped up the future welfare of our industries.

Changes in the World's Trade.

Business men in all the great countries of the world are now considering the changes in the world's trade which will follow the war. These changes will be due to many causes, none of which we can afford to overlook, the most important of them being:—

1st.—The determination of the Allied Countries, for mutual benefit, to buy as much as possible from each other, and to close their markets, as far as can reasonably be done, to the Central Powers.

2nd.—The probability of a preferential tariff between the various portions of the British Empire.

3rd.—The rise of the United States in exports and in wealth.

4th.—The pronounced increases in European wages.

5th.—The high taxation which must necessarily prevail for many years to come in all the belligerent countries.

All of these changes will have important effects on Canada. Our Dominion is known to-day, not only for the bravery of her sons, but for the range and excellence of war equipment and munitions which we have supplied.

Who can imagine a trade entente between the Allied Countries from which Canada will not benefit, particularly if her products are accorded a preference over those of her great neutral neighbor, the United States? Similarly a preferential tariff within the British Empire will offer us new opportunities which should prove a powerful factor in building up our industries. Already, with keen foresight and enterprise, many parent manufacturing companies in the United States are preparing to fill export orders from their Canadian plants, and many others, who have not yet established manufacturing branches here, will find Canada, on account of her new position in the world's trade, the most desirable field for investment and expansion.

In the year 1913 the total trade between the Central Powers and the Allied Countries amounted to more than $2,500,000,000. The displacement and readjustment of such a large volume of business will open many new doors for Canadian manufactured products.

Special Tasks for the Allies.

A number of important tasks will devolve upon the Allied Countries after the war. One of the first and greatest of these is the reconstruction of Belgium, France and Poland. We do not begin to conceive of the immense quantities of materials that will be required for all these countries. In every one of them special Commissions are now at work laying plans and preparing estimates for building up the shattered areas. The National Association of Belgian Architects, with the co-operation of the Belgian Secretary of State, are busily engaged on behalf of their own country.

The General Association of Municipal Hygienists and Technicians of France have made arrangements for a Reconstruction Exposition, to be held this summer in Paris.

In Belgium and France alone the habitations of 35,000,000 people are more or less damaged or destroyed, and everything must be replaced.

Orders will cover practically every kind of machinery made, from agricultural implements to the smallest kind of tool, hardware and spinning machinery, necessary machinery to be used in every industry in France; the amount of these purchases will no doubt run into the billions.

The Association referred to has already been asked to make prices and submit samples for the reconstruction of one city which will cost $30,000,000, another which will cost $50,000,000 and another which will cost $120,000,000. These districts will require supplies of all kinds, except food and clothing, and there is abundant opportunity for Canada to make her usefulness felt in peace as well as in war.

Manufactured Goods for Russia.

Another very important obligation which rests upon the Allied Countries is to supply Russia with the many lines and immense quantities of manufactured good which she requires, and thus make it unnecessary for her to buy these goods from Germany, as she has done in the past. For many reasons Russia has peculiar claims upon the Allied Countries. She is rendering magnificent service in the war. She was so thoroughly dependent on Germany from an economic standpoint that the complete wrenching of the international ties with Germany has left her in many respects needy and helpless. Her people are to-day in dire extremities for almost all classes of staple manufactured commodities, and in the engineering trades many of the specifications used are exclusively in the hands of German sources of supply.

In addition to her claims, Russia as a market has many attractions. Although she has 175,000,000 people, she has fewer manufacturing plants than Canada, 86 per cent. of her population are on the land, and the time has come when Governmental assistance and organization are being extended to them. To-day there are nearly 9,000 Farmers' Co-operative Societies in Russia under Government regulations, and, with the extension of this system, Russia may boast of the best organized agricultural communities in the world.

Then, too, the whole Empire of Russia is on the eve of a great peace revolution, which means the improvement of living conditions for the masses, the bringing about of stability in credit, and the universal purchase of many classes of goods not previously used.

In addition to this, Russia is entering upon the greatest programme for railway building which the world has ever seen—a programme which not only in itself, but in its trade resultants, will attract and demand assistance from many countries. There are, therefore, many important reasons why Canada should interest herself in the affairs and trade of Russia.

Opportunity and Necessity.

All the conditions which we have cited indicate that Canada will now have an opportunity which she has never had before of building up a sound, permanent export trade in manufactured products. Her opportunity in this respect is no greater than her necessity. The economic blow which we suffered before the war revealed to the business men of Canada the weakness of our industrial fabric. We hesitate to think what might have been the condition of Canadian industry had our manufacturers not turned at once to the execution of war orders. What will be the conditions in Canada when these orders cease? How are we to keep our workpeople employed? How can we find work for our returning soldiers? How are we to restimulate immigration? How are we to meet our fast increasing national obligations? Special measures will, no doubt, have to be adopted for immigration and soldiers' employment, but the main solution for the problems we have named lies in the securing of export orders.

Success Depends Upon Ourselves.

We have referred to the very favorable position occupied by Canada to secure these orders, but we must not imagine that they will come to us without the expenditure on our part of organization and energy. Canada has been introduced, as it were, to the Allied Countries. She must now come forward and give them detailed classified information as to what she can supply to them, and her manufacturing, transportation and banking interests, backed up by her Government, must co-operate in forming and carrying out a policy which will make it possible for her to compete against other countries.

We may now ask:

What is Being Done?

The Dominion Government has shown its desire to initiate special measures and to co-operate with the business interests of the country. The Prime Minister has caused to be appointed a Royal Commission known as the Economic and Development Commission, under the chairmanship of Sir James Lougheed. This Commission is now engaged in studying many important problems, and should recommend practical measures to meet the necessities of the present time. Among the subjects under consideration are:—

The Increased Production of Agricultural Produce.
The Transportation and Marketing of Agricultural Produce.
Immigration.
Systems of Land Settlement.
Agricultural Credit.
Co-operation in Production, Buying and Selling.
Development of National Resources.
Scientific Research; and
Export Trade.

We must agree that this Commission is capable of rendering most important service to Canada, and we feel that the Manufacturers will render them every possible assistance in making their investigations.

The Minister of Trade and Commerce has inaugurated a number of new features in his Department, in order to prepare for the new conditions. Chief among these are (1) the sending of a Business Men's Commission to report upon the conditions in Great Britain, France and Belgium; (2) the initial steps in establishing at Ottawa a Canadian Commercial Museum for the purpose of exhibiting samples of the various classes of goods imported into other countries; and (3) the making of preliminary arrangements for a Canadian Business Men's Conference, to be held at the Capital, probably in October next. At this Conference, which will deal with important national trade questions, all the principal factors will be represented, such as Banking, Transportation, Manufacturing, Mining, Engineering, Labor, etc. Some of the Canadian Trade Commissioners will also be present, and the report of the Business Men's Commission now in Europe will be received. All of these measures should receive our endorsement, and our heartiest support should be given in making each of them a success.

The Manufacturers' Effort.

It is naturally to be expected that if the Dominion Government, the Transportation Companies and the Banks of Canada are to interest themselves in export trade, the Canadian manufacturers should take an important lead, and show that they are willing to assume their full responsibility in the expenditure of time, energy and money necessary to bring about the organization of prosperity in this country.

Following the annual meeting of this Association a year ago, and growing out of the deliberations of that meeting, the Export Association of Canada was organized, and is already bringing export orders to Canada through its offices in Great Britain, Australia and New Zealand. The Association was not formed for the purpose of securing war orders, but rather to seek out representation in all the Allied markets for Canadian manufacturers, and to present as far as it was possible to do so to all the Allied Countries accurate information as to what can be supplied to them from Canada. It is well understood that, owing to the very limited amount of ocean tonnage for staple merchandise and the prevailing high freight rates, it has not been possible in the present period to consummate actual sales on all the enquiries which are coming to Canada from so many sources. Owing largely to the conditions named the Association has been obliged to refuse during the last eight months orders amounting to more than $3,000,000, but it has already placed with Canadian firms more than 400 orders, aggregating approximately $600,000. The business which has been actually booked, however, does not represent what the Association has accomplished. Careful investigations are being made from the London Office of the existing trade conditions in all the Allied countries, and lines are being laid which will give the members of the Association reliable and competent representation in all these markets as soon as conditions of transport will permit of actual sales.

The Association has been appointed Purchasing Agent in North America of the Crown Agents for the Colonies, and is now negotiating for similar appointments as buying representative for a number of the self-governing British Dominions. It is already in contact with the Reconstruction Commissions in France and Belgium, and will receive advance information concerning materials required for the reconstruction period.

It is sending this month its own representative to Siberia. He is taking with him a carload of Canadian samples and catalogues, and will meet the large buyers from Vladivostock on the coast as far westward as Omsk, where the Dominion Government has recently appointed a Trade Commissioner.

The Association also prepared and sent to the Lyons Fair last March a very creditable exhibit of Canadian manufactured goods, from which exhibit a number of important enquiries and orders have already resulted.

While it would appear, therefore, that the manufacturers have already initiated on their own behalf this most important work, we learn that the Association has up to the present time received the support of only 104 of the large manufacturing concerns in Canada, and that only $60,000 of its authorized $100,000 capital has been subscribed. Compared with the efforts made by the export movements in the United States, this seems small indeed. One large corporation organized in New York to do similar work, commenced with a paid-up capital of $50,000,000, and a number of other similar companies have commenced operations with large capital and correspondingly large organizations.

If the manufacturers of Canada are alive to the opportunities which are now facing them, their hearty support should be given to this movement. It has the endorsation of the Dominion Government, and the large transportation companies in Canada, and there is every reason to expect that it will be instrumental in bringing about a large measure of co-operation between the Government, the transportation companies, the banks and the manufacturers, which will count for much in building up a large export business for the Dominion. The measure of success which will attend its efforts really depends upon the support which it receives from the manufacturers, and they should rise to the occasion.

There was many individual manufacturing firms in Canada who do not expect to do a large export business, but we all recognize the fact that if through a national organization of this kind, millions of dollars' worth of business may be brought to Canada, the resulting prosperity will be felt in all our towns and cities, and by our entire industrial community.

Then, too, it should be remembered that a large number of Canadian firms who have not in the past derived any benefit from our export trade, should, under the new conditions, show sufficient enterprise to investigate and cultivate the friendly markets which will be open to us after the war.

The measure of business which will come to Canada under the new world-trade conditions is dependent upon the organization of our forces to-day, so that when peace is declared, the lines for communication and sale may be already in existence.

Respectfully submitted,

G. M. MURRAY, *Secretary.* H. H. CHAMP, *Chairman.*

Mr. Champ, after reading the report, moved its adoption. The motion was seconded by Mr. P. W. Ellis.

Discussion.

Mr. Ellis, in the course of a short speech, spoke eulogistically of what Canada had accomplished in the manufacture of munitions. He pointed out, however, that in Great Britain the Government was now engaged in building national factories in order to relieve the manufacturers over there and enable them to return again to the business they were equipped for. That circumstance raised an important question in Canada, where so many manufacturers had gone into the munition business. The transition period would be a serious one for Canada.

Mr. R. J. Younge, of the Export Association, added a few words to the discussion, urging the members of the Canadian Manufacturers Association to get more strongly behind the efforts of the Export Association.

Mr. W. H. Banfield, in an interesting speech, told of the achievements of Canada in the munition business, with a reference to the work now being done by women in the munition factories. Like Mr. Ellis, he considered that a very serious problem would arise after the war was over, and urged his hearers to plan for export business.

The motion was carried.

SEEKING SITE FOR NICKEL PLANT.

Representatives of the International Nickel Company were in St. John recently examining possible sites for the nickel refining plant which the company is to erect in Canada. They were pleased with the prospects here, and have asked the city council for terms for property it owns on the river front. Before presenting their report to the Company the engineers will investigate some other maritime locations.

NEW FISH FIRM.

The Booth Fish Company which has large interests on both the Atlantic and Pacific coasts, have taken over the plant of the New Brunswick Canners at Chamcook, St. Andrews, N.B., and will operate it this year in a general fish-packing business. This plant was originally constructed by the Canadian Sardine Company and cost over half a million dollars. Last year the works were occupied by the Lane and Libby Packing Company, who have transferred their interests to the Booth concern. The present holders are a wealthy corporation.

CANADA'S BIG RECRUITING PROBLEM

Special Report on the Subject Presented to the Annual Meeting of the C.M.A., with Speeches of Several Distinguished Visitors

AMONG the most important matters brought before the recent annual meeting of the Canadian Manufacturers' Association was that of the co-ordination of recruiting and production. Probably no more vital problem faces the country at the present moment and the fact that not only was a special report presented on the subject but that representatives of the military and of those women's organizations, which are attempting to lift part of the burden resting on the male portion of the population, were present, was an indication of the seriousness of the situation.

The special report was presented and read by Mr. S. R. Parsons. It ran as follows:

The problem of raising 500,000 men for the Canadian Expeditionary Force with the least possible disturbance to the economic structure of the country is one which is engaging the attention of all employers of labor. While it is true that the enlistment of 334,209 men for overseas service up to May 31st, 1916, is a matter for congratulation, it has been felt for some time that the recruiting methods used to secure the desired object have been and are wasteful, haphazard and unduly disturbing to production.

During the preliminary stage of the war, when comparatively small forces were raised in haste, the voluntary system was satisfactory, as the enlistment included a large number of unemployed men, whose absence did not interfere to any great extent with the economic life of the country. But when the limit of the Canadian army was raised to 250,000 men and later to 500,000, it became evident that the withdrawal of so large a percentage of the country's citizens could not be accomplished without a serious disorganization of all forms of industry.

As recruiting proceeded it was noticed with concern and regret that thousands of men were enlisting who were urgently needed in Canada, and that many more thousands, who might easily have gone, shirked their duty and evaded their responsibility. As a result of this development, business concerns lost large numbers of highly skilled employees whose replacement was difficult, and the total cost of the war was greatly increased through the enlistment of thousands of married men whose families became a partial charge on the country, requiring the expenditure of immense sums in separation and patriotic fund allowances.

The economic problem connected with the war, which must be solved by the citizen of Canada, is to secure the remaining 165,000 necessary to bring our total forces up to 500,000 with the least expense to the country and the minimum disturbance to all forms of production.

In order to understand this problem it will be advisable to study the following recruiting returns, which have been supplied through Lieut.-Col. George H. Williams, Officer in Command of Recruiting for Military District No. 2:

Enlistments in Canada up to May 31st, 1916.

Military Districts.	Headquarters.	Area of Districts.	Number of Enlistments.
No. 1	London	Western Ontario	28,213
No. 2	Toronto	Central Ontario	75,363
No. 3	Kingston	Eastern Ontario	34,915
No. 4	Montreal	Western Quebec	28,501
No. 5	Quebec	Eastern Quebec	6,402
No. 6	Halifax	Nova Scotia, New Brunswick, Prince Edward Island	31,061
No 10	Winnipeg	Manitoba, Saskatchewan, Keewatin, Thunder Bay, Rainy River	68,888
No. 11	Victoria	British Columbia and Yukon Territory	30,709
No. 13	Calgary	Alberta, MacKenzie Territory	30,157
Total			334,209

The above table shows that, during the 22 months of war, Canada has raised on the average for overseas service 15,000 men per month. This fact alone proves that the recruiting methods adopted by the military authorities are effective in that they are securing large numbers of men. The trouble is that, in so many cases, they have not secured the right men.

A further examination of recruiting methods shows that some parts of Canada have contributed more recruits than other parts, and also that certain parts of Canada have already given more than their proportion of the 500,000 that are required.

Quotas Needed from Military Districts to Bring the Canadian Expeditionary Force up to 500,000 Men, and the Number Secured.

Military District.	District's Portion of 500,000.	Number of Recruits secured up to May 31, 1916.	Deficit or Surplus of District.	Population of District according to Census of 1911.
No. 1	44,000	28,213	−15,787	635,912
No. 2	86,000	75,363	−10,637	1,235,001
No. 3	53,000	34,915	−18,085	763,936
No. 4. } No. 5 }	139,000	34,903	−104,097	2,003,232
No. 6	65,000	31,061	−33,939	937,955
No. 10	60,000	68,888	+8,888	858,046
No. 11	27,000	30,709	+3,709	392,480
No. 13	26,000	30,157	+4,157	374,663
Total	500,000	334,209	−165,791	7,201,225

A question that arises in studying the recruiting returns is: What are the occupations of the enlisted men? While it has been impossible for the military authorities to prepare a greatly detailed classification, the following statement shows the seven classes into which the recruits secured up to February 15, 1916, have been mainly divided:

Classes.	Number Enlisted.	Percentage of Total Enlistments.
Professional men	16,153	6.14
Business men	6,530	2.48
Clerks	48,777	18.54
Manual labor	170,369	64.75
Farmers, including farm laborers.	14,200	5.40
Ranchers	2,844	1.08
Students	4,238	1.61
Total up to Feb. 15th	263,111	100.00

The above table shows that the rural districts of Canada did not, up to the date mentioned, make heavy sacrifices of men. Fourteen thousand two hundred, which it must be remembered, includes farm laborers, is only 5.4 per cent. of the total enlistments up to February 15, 1916. The great majority of those listed under the class "Farmers," were farm laborers, most of whom were of British birth. Comparatively few farmers or their sons have been taken from

the land. The classes, "Business Men," "Clerks," and "Manual Labor," composed 85 per cent. of the enlistments up to February 15th. While it is true that these broad classes include all kinds of business and industry, it is certain that manufacturing has contributed by far the greatest total.

Another question which is asked is: Who are the recruits according to birth? The answer is given in the address delivered by Brigadier-General, the Honorable James Mason, in the Senate of Canada, on May 4th, 1916, and is contained in the following extract from his speech:

	Census of 1911, Total Males 18-45.	Enlisted.	Proportion of Number Enlisted to Total Number.	Proportion as to Total Enlistments.
Canadian-born (English)	667,000	85,000	About 13%	28½%
Canadian-born (French)	445,000	12,000	About 3%	4½%
(This includes French battalions and all French names of other battalions.)				
United Kingdom or British-born....	307,000	180,000	60%	61%
Foreign-born.....	306,000	18,000	6%	6%
Total enlistments to March 31, 1916.		295,000		

	Racial Proportion of Population.	Total Males, 18-45.		Of which
French-Canadian.....	2,000,000	445,000	1,112,000	2-5 French
English-Canadian.....	3,000,000	667,000		3-5 English
United Kingdom born.	1,000,000	307,000		
Foreign.....	1,250,000	306,000		
Total		1,725,000		

Efforts to Systematize Recruiting.

The next section of this report deals with the efforts which were made by the manufacturers in several localities to co-operate with the military authorities for the purpose of preventing the enlistment of indispensable men and of encouraging the enlistment of men who could be spared. In Brampton, Ontario, a conference was called of all manufacturers and other employers and the recruiting officers, and lists were prepared by each employer, dividing his employees into three classes: (*a*) Indispensable; (*b*) Important, but can be spared if necessary; (*c*) Can be spared. As a result the recruiting officers did not attempt to enlist men of the first class and only in special cases men of the second class, and on the other hand the employers co-operated with the recruiting officers to secure men of the third class. The same plan was put into effect at St. Catharines, Ontario, with satisfactory results. An attempt was also made in Toronto to use a similar plan, following the requests of officers commanding newly formed battalions for permission to send their recruiting officers through the factories of the city, and a complete memorandum on the subject was considered by the Toronto Branch.

The members of the Toronto Branch felt that the plan should be enlarged to include other employees besides their own, as for example builders', retailers' and bankers' employees, and that, otherwise, the attention of recruiting officers would be concentrated on factories, to the possible neglect of other employees of less economic importance. It was also felt that the localization of such a plan in any community would tend towards the ultimate assumption by that community of an unfair burden in comparison with that borne by other communities which pursued a policy of indifference. It was pointed out that the principle, to be fair and effective to the greatest extent, should be applied to the country as a whole, and that, in other words, this scheme (which was merely the well-known plan of registering all men available for military service), should be made national.

The Secretary of the Association communicated accordingly with Sir Sam Hughes, Minister of Militia, setting forth the above views. The fact that the Association was referred by him to Brigadier-General W. A. Logie, Officer Commanding Military District No. 2, whose headquarters are in Toronto, was taken to mean that the Government was not ready to deal with the problem on a national basis.

Munition Factories.

Indiscriminate recruiting methods were particularly vexatious and costly to munition factories, where highly skilled men engaged in the manufacture of shells and other military necessities were induced to join the army, leaving their places unfilled until other men could be trained to replace them. The grievances of those engaged in making munitions are contained in the following resolution which was adopted at the organization meeting of the Munitions Section of the Canadian Manufacturers Association:

"WHEREAS it is recognized that in undertaking to raise an army of 500,000 men for overseas service, Canada must necessarily subject her machinery for production to a very severe strain;

"AND WHEREAS in view of the ever-increasing financial obligations she is assuming, it is of prime importance for Canada to maintain not only the volume but the efficiency of her production at the highest degree compatible with the military obligations she has assumed;

"AND WHEREAS efficiency in the production of munitions is obviously of still greater importance, in view of the absolute necessity for an adequate supply of munitions to bring about an early and successful termination of the war;

"AND WHEREAS present methods of recruiting fail to protect the production of munitions in Canada to the extent to which this meeting believes their production should be protected;

"BE IT THEREFORE RESOLVED that the Munitions Section of the Canadian Manufacturers Association in general meeting assembled, place itself on record as of the opinion that the matter is one which should receive immediate attention at the hands of the Government and of the Imperial Munitions Board, and that a joint interview be arranged in Ottawa at the earliest possible date, not only for the purpose of impressing upon those in authority the views of this meeting, but of co-operating with them in an effort to arrive at the most practicable solution of the problem."

That the views of the Canadian manufacturers of munitions in regard to the enlistment of their skilled workmen are shared even by business men in a neutral country is indicated by the following extract from an address, entitled "Organization for Industrial Preparedness," which was delivered by Spencer Miller, member of the American Society of Mechanical Engineers, at a meeting of that body in New Orleans in April, 1916:

"Clause D. In war as now waged the industrial force has become quite as important as the fighting army. Skilled mechanics in all lines of production work must be kept from enlistment in the regular army and must be retained in the factories, mills and mines for the production of munitions. It is essential, therefore, that the names of these skilled workmen be listed and that the men themselves be enrolled in the industrial reserve. Explanations and instructions as to the detail of such organization will be submitted at a later date. A button or other distinguishing

mark will be supplied by the government in the event of war to skilled workmen enrolled in the industrial reserve, and such enrolment will be considered to carry with it honors equal to enrolment in the fighting army. A government card will be issued to each man enlisted."

Action of Council.

Following the organization of the Munitions Section, the following memorandum on the subject of Recruiting was presented to the Executive Council in March last:

"A communication has been received from the newly organized Munitions Section, asking the Association to affirm and actively support a resolution it has adopted on the subject of recruiting. This communication raises a subject upon which, in the opinion of your Executive Committee, it is desirable to have a full and frank discussion, and to that end the following review has been prepared, outlining the situation as it affects manufacturing industry.

"Canada has set out to raise, equip and maintain an army of 500,000 men. We may or may not doubt her ability to raise such an army, but if she accomplishes it by enrolling every eligible man who offers his services, regardless of the part he plays in our scheme of economic production, she will certainly make needless sacrifices in attaining her object, sacrifices that by their very uselessness will weaken the cause they are intended to serve, instead of strengthening it.

"Indiscriminate recruiting may have been a good enough policy for Canada when she had in view the raising of an army of only 100,000, but that same policy is fraught with real danger now that she is attempting to raise an army of 500,000. It would be idle to belittle the need for more men at the front, but it would be criminal negligence not to make sure of leaving at home those who could be depended upon to keep the men at the front clothed and fed and supplied with bullets.

"Every Canadian should be doing something to help win this war. The more it becomes prolonged the more urgent is the need for everyone to help. Some will have to fight. Those who do not fight should be producing, and those who are doing neither should be paying. The ideal arrangement would be for everyone to offer his services to the State, for under such a system, Canada could get down to nationalized team work, and thus secure the maximum results with the greatest economy.

"Conscription has been freely suggested, but conscription has an ugly sound. Moreover, both political parties have taken a stand against conscription and for that reason it would be impracticable to secure its adoption from the present Government. We do, however, want the results that conscription would make possible, and if those results are as readily obtainable under a system of national service, or any other system with a less objectionable name than conscription, it would seem to be the duty of our Association not only to advocate that plan, but to use every effort to bring about its adoption.

"The failure of the Government to initiate a national plan has led to local plans being put into operation, designed to serve local ends. Of such plans, the one reported by the Toronto Branch at the last meeting of this Council is a fair example. While not actually put into operation in Toronto, it was put into operation in various smaller municipalities, where manufacturers, retailers, wholesalers, etc., all contributed in equal proportions towards making it a success. In Toronto, manufacturers were met with a refusal to co-operate from the Board of Trade, Bankers' Association, and the Retail Merchants' Association. The question, therefore, arose: Why should manufacturers invite the concentrated fire of recruiting officers upon their employees when clerks in banks, retail stores, insurance offices, and while builders, teamsters, street railwaymen and others were not going to be similarly exposed? Furthermore, why should Toronto manufacturers make sacrifices out of all proportion to those that might be made by the manufacturers of some other municipality? An additional reason why the plan was not made operative in Toronto was that that no guarantee could be secured from the Minister of Militia with respect to the protection of those employees who might be designated as indispensable.

"While the lack of any additional plan has given rise to a great deal of dissatisfaction, there are two features worthy of special mention because they have served to increase that dissatisfaction in a marked degree. The first is that some sections of Canada have been responding to the appeal for recruits much more promptly and generously than others. The following figures issued from Ottawa only two days ago tell the story:

> Latest recruiting figures show that about 280,000 men have enlisted in Canada. Nearly 118,000 are from Ontario, 55,000 from Manitoba and Saskatchewan combined, 30,000 from Quebec and 25,000 each from British Columbia, Alberta and the Maritime Provinces.

"The second relates to the inconsistency evident in the policy pursued by different departments of the Federal Government. The Minister of Agriculture calls upon farmers for production, and still more production, so that Canada will be able to do her duty to the Empire in the matter of food supplies. The Minister of Finance calls upon manufacturers for production, and more production, so that Canada will be the better able to meet the financial obligations she has assumed. The Imperial Munitions Board insists upon deliveries, and threatens to cancel contracts unless these deliveries are more prompt. Yet all the while the Minister of Militia keeps taking badly needed men from the farm, from the workshop and from the munitions factory, regardless of the damage which his actions may cause to our machinery for production. This inconsistency, this lack of co-ordination, is decidedly unbusinesslike, and impairs to a serious degree the confidence of the public in our administration.

"Believing that it would be inadvisable for the Association to content itself with criticism, without offering to be constructively helpful, it is suggested that a strong delegation be appointed to interview the Government in support of a plan of national service along some such line as the following:

"That a proclamation be issued calling upon every man of 18 years or over to offer his services to the State. Let enrolment offices be opened in every city, town and county where those of eligible age shall be required to register their names, ages, occupations, etc., and be given a badge or armlet to mark them out as men who have answered the call. Let a board be appointed in connection with each enrolment office, constituted of, perhaps a judge as chairman, an officer of the Militia and one or two others, to consider each man's case, and assign him to the class of service which his peculiar qualifications best fit him for, whether that service be overseas, home defence, some form of production, or anything else essential to the conduct of our national affairs in war time."

Policy Followed in Montreal.

It was decided by the Executive Council to send a delegation to interview Premier Borden on the subject of putting national registration into effect and a definite appointment was made. Owing to certain unavoidable circumstances, this appointment was postponed, and before a new one was made several other delegations interviewed the

Premier on the same subject and received no encouragement. The Association consequently, not wishing to invite a refusal, abandoned the proposal to hold a conference with the Premier and his Advisors.

At a largely attended meeting of the Employers and others, held at the Montreal Board of Trade Building, on March 9th last, presided over by Mr. H. B. Walker, the president of the Board, and addressed by the Hon. Minister of Militia and Defence, Major-General Sir Sam Hughes, K.C.B., and by Lord Shaughnessy, K.C.V.O., and others, the following resolution, moved by Mr. J. H. Sherrard, President of the Canadian Manufacturers Association, and seconded by Mr. Z. Hebert, Vice-President of the Montreal Board of Trade, was adopted:

RESOLVED: "That while many of the large business establishments of Montreal have already assisted recruiting by encouraging and enabling their employees to enlist, and have also freely allowed recruiting officers to address their employees collectively, it is desirable that these means of recruiting should be still further extended;

"That while it is recognized that every man should be allowed to decide for himself as to whether or not he will enlist, and while it is not desirable that employers should attempt to influence unduly employees to enlist, it is deemed expedient that every fit man of military age should be asked to consider the question of enlisting at once, or of registering his name for future consideration, and to that end this meeting prays the heads of all industrial establishments, wholesale houses, banks, insurance companies, and all other employers of labour, to offer every facility to recruiting officers desiring to address their employees, and also to furnish to the Citizens' Recruiting Association full list of their employees of military age in order that, if deemed necessary, a personal appeal may be made to them by those officers."

As a result of this meeting a supply of printed forms was distributed among the employers of Montreal asking them to return full lists of their employees with particulars in each case to the Citizens' Recruiting Association of Montreal.

In April, the Women's Emergency Corps of Toronto, which has already registered hundreds of Toronto women who are willing to engage in productive or clerical occupations in order to release men for military service, communicated with the Secretary, and a circular setting forth their offer was sent to the members of the Toronto Branch.

The above attempts to put recruiting on a scientific basis are only a few of the efforts which have been made by boards of trade, recruiting committees, employers' associations and other bodies to induce the Dominion Government to put into effect a plan which will stop the continual drain of highly skilled employees and which will at the same time secure the enlistment of those, especially unskilled, young and single men, who can be most easily spared.

In Other Countries.

A survey of the methods used in other countries to raise armies shows how far Canada lags behind in recruiting methods. Germany and Austria have every man in the nation allotted to the sphere which he can best fill and for which he has been specially trained. This was done long before the outbreak of the war. Drafts for the army are raised by the simple and effective process of requesting certain specified classes to report for duty. Compulsory military service was in effect in all belligerent countries except Great Britain and her Colonies many years before the outbreak of war. Great Britain began with a voluntary system, followed with that semi-compulsion which is created through the concentration of public opinion upon eligible men, advanced to Lord Derby's scheme of calling out volunteers by classes, and has finally adopted conscription. Australia and New Zealand have systems of national registration. The system used in New Zealand is outlined in the following schedule which was used under the provisions of the National Registration Act of 1915:

NATIONAL REGISTRATION ACT, 1915

1. In accordance with a Proclamation issued by the Governor under the above Act, all male residents of New Zealand between the ages of SEVENTEEN and SIXTY, except members of the permanent paid Military Staff of the Defence Department and members of the Expeditionary Force reinforcements in camp undergoing training, are required to furnish to the Government Statistician, at Wellington, the particulars set out in the personal schedule below. This applies to all males who have attained the age of seventeen but have not attained the age of sixty years.

2. Any person to whom the Proclamation relates who wilfully fails to furnish particulars as required, or who wilfully makes any false statement with respect to any such particulars, is liable to a fine of £100 or imprisonment for six months.

3. Every officer employed in the collection of the schedules or in the compilation of the Register who wrongfully divulges or makes use of any information acquired by him in the course of his duties is liable to a fine of £100.

4. The schedule is to be properly completed, signed, dated, and placed in the accompanying envelope, and then handed to an officer of the Post and Telegraph Department or posted to the Government Statistician at Wellington.

The register to be compiled under the above Act is purely a civil register for the purpose of ascertaining the resources of the Dominion in men, and the registration here required does not involve enlistment nor is it in substitution for the present system of enlistment. Those desirous of enlisting can obtain enlistment forms at the nearest Post-office or Defence Office.

All information will be regarded as strictly confidential.

Please do not fold this schedule except where marked.

MALCOLM FRASER, Government Statistician.

NEW ZEALAND NATIONAL REGISTER OF MEN

Name of County or Borough.

PERSONAL SCHEDULE.
(Please write clearly and distinctly.)

CLASSIFICATION.

This space not to be filled in.

1. Name (in full)—

Surname: .....

Christian name: .....

Address (in full)—

Place of residence: .....

Place of business (if any): .....

2. A. Date of birth: ..... Age last birthday: ..... years.

B. State Country of birth of (a) Yourself ..... (b) Your father ..... (c) Your mother .....

3. A. Are you a British subject (a) By birth? ..... (b) By naturalization .....

B. If naturalized, state—
(a) Date of naturalization: .....
(b) Place of naturalization .....
(E.G., United Kingdom, New Zealand, Canada, or as the case may be.)

C. Are you a foreign subject .....
If so, state country of allegiance: .....

4. A. State whether single ("S"), married ("M") or widower ("W"): .....

B. State number of persons dependent on you—
(a) Wholly dependent: ... (b) Partially dependent ...

5. A. What is your present occupation? .....

B. In connection with your present occupation, are you—
(a) An employer of labor? or .....
(b) Working on your own account but not employing labor? or .....
(c) Assisting, but not receiving salary or wages? or .....
(d) An employee receiving salary or wages? or .....
(e) Unemployed for more than one week? ....
Reply "Yes" or "No."

C. If employed, state business of employer: .....
Name of employer? .....

D. What other occupation (if any) have you had practical experience of? .....

6. A. State (a) Height: .....ft.....in.
(b) Weight: .....st.....lb.

B. State whether your general health is: (a) Very good; (b) Good; (c) Indifferent; (d) Bad: .....
If health indifferent or bad, state cause: .....

C. If suffering from blindness, deafness, loss of limb, or other physical infirmity, give particulars: .....

7. If you have had military training at any time state—
(a) Arm of the Service: .....
(b) Rank held: .....
(c) Total length of service in all capacities: .....

8. If between the ages of NINETEEN AND FORTY-FIVE—
(a) Have you volunteered for military service beyond New Zealand as a member of an Expeditionary Force in connection with the present war? .....
If so, have you been accepted for service or rejected? .....
(b) If you have **not** volunteered for service—
(i) Are you (being a single man without dependents) willing to become a member of an Expeditionary Force? .....
(ii) Are you (being a single man with dependents, or a married man or a widower with dependents) willing to become a member of an Expeditionary Force, if required? .....
If so, in what arm of the Service do you prefer to serve? .....
(c) If you have not volunteered for military service and are not prepared to volunteer, are you willing to serve in any civil capacity in connection with the present war? .....
If so, state in what civil capacity: .....
(d) If there are any circumstances or reasons that prevent you from offering your services, state them:
.....
.....
.....

PARTICULARS OF RELATIVES WHOLLY OR PARTIALLY DEPENDENT ON YOU.

Name and Address.	Age.	Occupation (if any) or Condition (e.g., Retired, Old-age Pensioner, Apprentice, Invalid, or as the case may be).	Relationship (e.g., wife, son, mother, or as the case may be).	Whether wholly or partially dependent on you.	In Case of Partial Dependents, Extent of Dependency per annum. £	Other Income (if any) of Dependent per annum. £

I CERTIFY that the particulars given in this schedule are correct to the best of my knowledge and belief.

Place and Date ..... Signature: .....

ALL INFORMATION WILL BE REGARDED AS STRICTLY CONFIDENTIAL.

The situation in Canada is rapidly becoming serious. Thousands of skilled workmen have been taken from factories which are engaged on army contracts and put into uniform, where their military value has been actually diminished. If one simultaneous draft had been made upon the factories working on war supplies and no further levies had been asked, the owners would have been able to estimate the labor problem before them. But, instead of one draft, there have been hundreds. The foreman of one department went one day, his successor a week later, half his staff followed, and those who replaced them were again seized by recruiting officers. The results have been constant disorganization, repeated training of new batches of men, loss of time, unprofitable expenditure of money, and, most serious of all, inability to produce war supplies up to the capacity of factories under normal conditions.

To a greater or less degree the above situation applies to other forms of production.

It is not good policy, from a military point of view, to enlist such men as farmers or farm foremen of long experience, who can get the best results from the land, or business men occupying important positions when there are still thousands of young single men in the country who are obviously indifferent to the call of duty.

What the Census Shows.

Let us consider the last census of wage earners taken by the Dominion Government, and select some of the occupations now filled by men of military age, keeping in mind the question: Cannot a great number of the men engaged in these occupations be enlisted and replaced in civilian life by (a) returned soldiers; (b) rejected men; (c) women and girls; (d) old men and boys?

I. Agricultural—

Fruit pickers, dairy workers, servants, gardeners, florists, nurserymen.

II. Domestic and Personal Class—

Barbers and hair dressers, cooks, elevator operators, bell boys, housekeepers, stewards, launderers, servants, waiters.

III. Fishing—

Employees engaged in taking, curing, drying and canning fish.

IV. Lumbering—

Office staffs, checkers, woodyard foremen.

V. Manufacturing—

The time is approaching when we will have to consider, as they have already considered in England, what industries are essential to the progress of the war. When it becomes necessary to curtail, and, perhaps, altogether absorb all the employees of certain factories, it is inevitable that those which produce luxuries will suffer first. We may as well face the grim fact that, if the war continues over a period of years, it may be necessary to close factories which produce luxuries and comforts that are not considered necessary, in order that factories which are producing war supplies and necessaries for the civilian population may be allowed to operate at their full capacity. Recruiting officers have complained that, where they attempt to co-operate with factory owners, those owners include in their lists of indispensable employees men who can be spared. We must realize that some business is bound to suffer and that in all co-operation with the military authorities, which has for its aim the retention of skilled employees, and the release of unskilled employees, manufacturers must play fair.

VI. Mining—

Most mining operations are of military value during a war. Canadian mines have already given many recruits. A few may still be left among office staffs.

VII. Miscellaneous—

Baseball players, billiard room attendants, bill posters, theatrical employees.

VIII. Professional Class—

Actors, architects' apprentices, artists and teachers of art, astronomers, authors and literary men, clergymen, decorators, dentists' assistants, government clerks, government officials, interpreters, inventors, journalists, lawyers, lawyers' clerks, librarians, municipal clerks, municipal officials, musicians and teachers of music, notaries and conveyancers, opticians, professors, sculptors, sculptors' assistants, stenographers, surveyors, teachers.

IX. Trade and Transportation Class—

Accountants, advertising agents, express agents, insurance agents, auctioneers, bookkeepers, carpet layers, cashiers, checkers, bank clerks, office clerks, rent collectors, commercial travellers, drivers, errand boys, office boys, linemen, parcel boys, baggage men, oilers, porters, section and track men, storekeepers, watchmen, laborers, motormen, conductors, timekeepers, toll gate keepers, weighers, gaugers, measure managers.

X. Salesmen—

Men engaged in selling books and stationery, boots and shoes, carpets, ladies' wear, china, glass and crockery, cigars and tobacco, men's clothing and furnishings, confectionery, dry goods, fancy goods, flowers, fruit, furniture, jewellery, liquor and beverages, sewing machines, hardware.

XI. Students—

While the universities and other institutions of learning have contributed a considerable number of soldiers, there are still thousands of young men of military age carrying school bags instead of rifles. It is necessary to keep up the supply of doctors and technical men, but application to such subjects as classics, philosophy, or history, seems unprofitable in war time. Students, with some exceptions, are not performing any military duty by continuing at school. They are not helping to run factories or farms; they are not of financial assistance to their parents. On the contrary, they are a temporary burden on the country, which has to pay a considerable part of the cost of their education. If students remain peacefully acquiring the luxury of higher education during a crisis like the present, the country will begin to question the value of an educational system which attracts and holds such men.

The Three Armies.

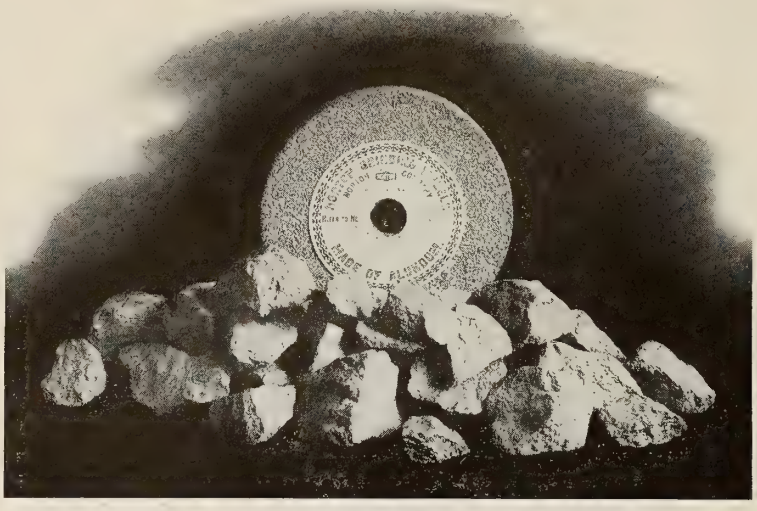
The time is at hand when our available men should be divided into three armies:

I. The Fighting Army—

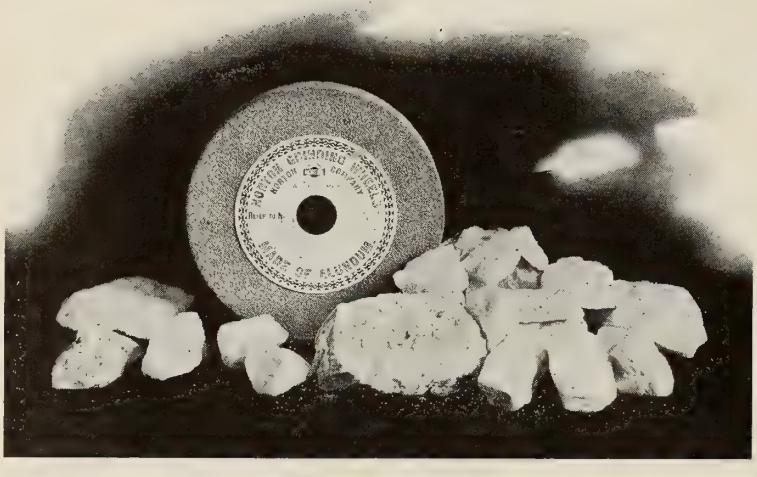
This should contain a large proportion of young, single men, who can most easily be spared from industry, and such technical men as are needed.

II. The Industrial Army—

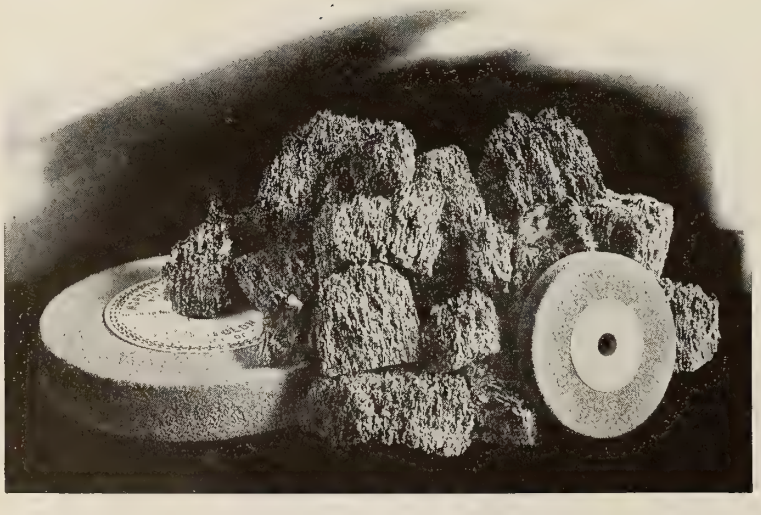
This should include the technical men not needed for special services in the army, enough men to form permanent staffs for the industries which are needed to prosecute the war. Such employees should be enrolled by the military authorities and should be given distinctive armlets or buttons to show that they were on active service. These armlets or buttons should be issued by a central authority on a common principle.



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Modern electric furnace abrasives that are big factors in securing rapid production and low cost in hundreds of industries and in thousands of the world's workshops.

Many of the leading machines, tools and implements that keep industry moving at its present fast pace are dependent to a large extent upon them.

It has been stated on good authority that the Grinding Wheel must be given much credit for the present state of perfection of the sewing machine, phonograph, cash register, adding machine, typewriter, automobile, aeroplane, linotype, printing press, locomotive, battleship and modern agricultural machinery.

Every grinding operation can be performed with the highest degree of satisfaction by these two classes of Norton abrasives— Alundum and Crystolon—both of which are manufactured in strictly modern electric furnace plants at Chippawa, Ontario.

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Workmen to man enough factories to supply the civilian population with necessaries should be provided in addition.

III. The Agricultural Army.

This should retain the experienced farmers and farm foremen, and a reasonable number of assistants. Its object would be to supply all three armies and the civilian population with food.

Distributed through the Industrial Army and the Agricultural Army should be the returned soldiers, rejected men, women and girls, old men and boys, who would take the places of those engaged in more active military service.

While the conditions existing in Canada and Europe are scarcely capable of comparison, we are all aware of the great extent to which the places of able-bodied men of military age have been taken by ineligible men and by women and children. In Europe women are doing most of the work which is not directly connected with military activity, and are also doing much of the manufacturing of war supplies.

Recommendations of the Committee.

Your Committee believes sincerely that 500,000 men should be enlisted and can be enlisted, but that, in accomplishing this great and worthy object, there should be more co-ordination of military, industrial and agricultural activities.

Your Committee, therefore, begs to lay before this Convention the following resolution, which has already been adopted by the Executive Council, but upon which no action has been taken by the Government:

"That a proclamation be issued calling upon every man of 18 years or over to offer his services to the State. Let enrolment offices be opened in every city, town and county, where those of eligible age shall be required to register their names, ages, occupations, etc., and be given a badge or armlet to mark them out as men who have answered the call. Let a board be appointed in connection with each enrolment office, constituted of perhaps a judge as chairman, an officer of the militia, and one or two others, to consider each man's case, and assign him to the class of service which his peculiar qualifications best fit him for, whether that service be overseas, home defence, some form of production, or anything else essential to the conduct of our national affairs in war time."

G. M. Murray, *Secretary.* S. R. Parsons, *Chairman.*

After the adoption of the report had been moved and seconded, the President invited Brigadier-General Logie, C.O. of the 2nd District, to address the meeting. The general's appearance was greeted with prolonged applause. His remarks were brief and to the point.

Brigadier-General Logie.

Referring at the outset to the projected visit of the members of the Association on the following day to the camp at Niagara, General Logie said:

"With regard to the report which has just been read, it is a very thoughtful paper, but of course, I am precluded by my position—I am a servant of the government—from either advocating the things that are recommended in this report or dissenting from them. I am, just as I say, the servant of the government and suggestions from me would be out of place in a matter of this kind. It is purely a civilian matter, recruiting I have always contended is a civilian matter, and for that reason when I first offered my services and went on a military job, civilian recruiting leagues were organized in this district. The suggestion came from Lieutenant-Colonels Robertson and Hatch, both heads of that body, who are local citizens here, active and thoughtful. I think they were the first to suggest those committees. The idea which they gave out has spread through Canada and I think in every municipality there are now civilian recruiting leagues and war auxiliaries. Another officer who has been most efficent in that regard is Major Williams, now Lieutenant-Colonel Williams; he is a clergyman here, he is filled with zeal and fire and has been of inestimable value to me in recruiting in this district.

"Now if we leave recruiting to civilians, civilians are the people who can impress their views upon the government and the government will take them into its consideration and act upon them or not as these ideas recommend themselves to the government. I cannot again enter into that. The government is composed of large-minded men, and I have not the slightest doubt that when the time is ripe the government will acceed, though I can't speak for it, and I have no doubt speaking as a citizen, that the government will consider any wise suggestions offered by you.

"Now in this district in recruiting we have tried to systematize as far as we could. We are eleven thousand short of our quota. I am making an appeal to the municipalities to fill up not only the city battalions but the county battalions and make up the eleven thousand men we are short of, after which we will go on, because we think in No. 2 district we have perhaps the richest district, and we think that here we are as good as anybody else, without disparaging the magnificent efforts in other localities, particularly in the west where the tables given in this report show such a magnificent surplus of eight thousand, four thousand and three thousand men. I say in No. 2 we are older and richer and should lead

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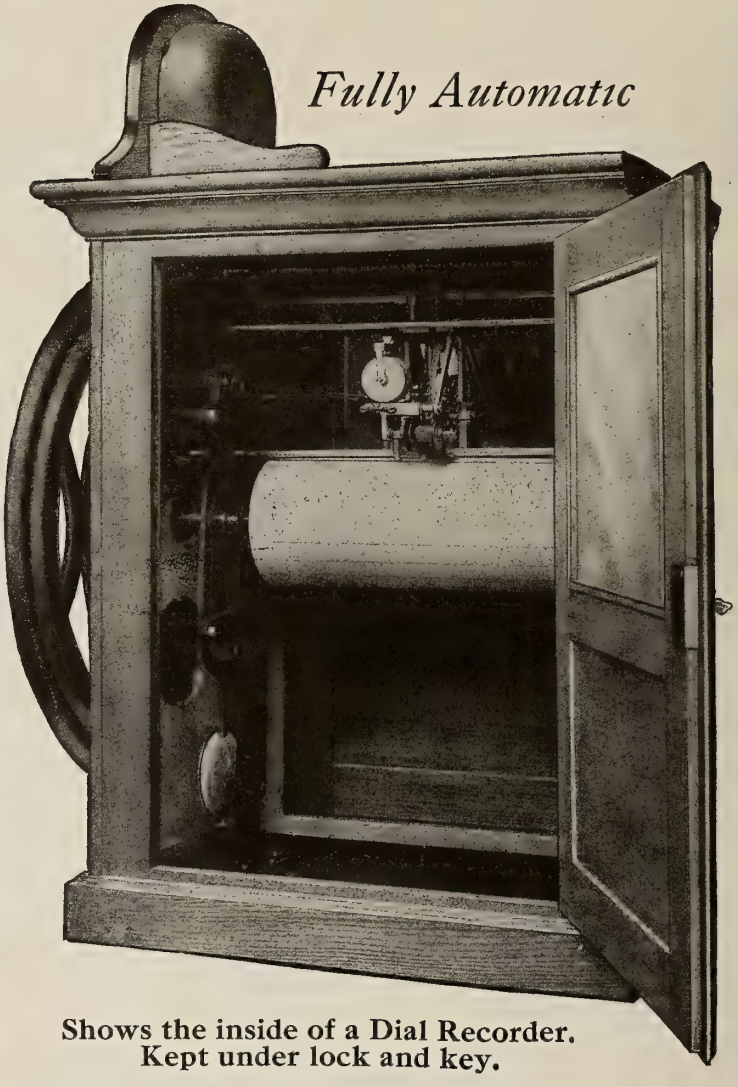
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The white drum in the cut shows the weekly sheet.

The printing mechanism moves automatically from the In column to the Out column and vice versa, at the set hours. Also from one day to the next.

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"You are paying for it"

"What style of Time Recorder do you use?" asked one manufacturer of another.

"None," said the other, "the old way is good enough for me, I don't spend a cent on them."

"You don't, eh," said the first. "Well, we've tried both ways, and it's a safe bet you're paying for one right now just because you haven't got it."

International Time Recorders

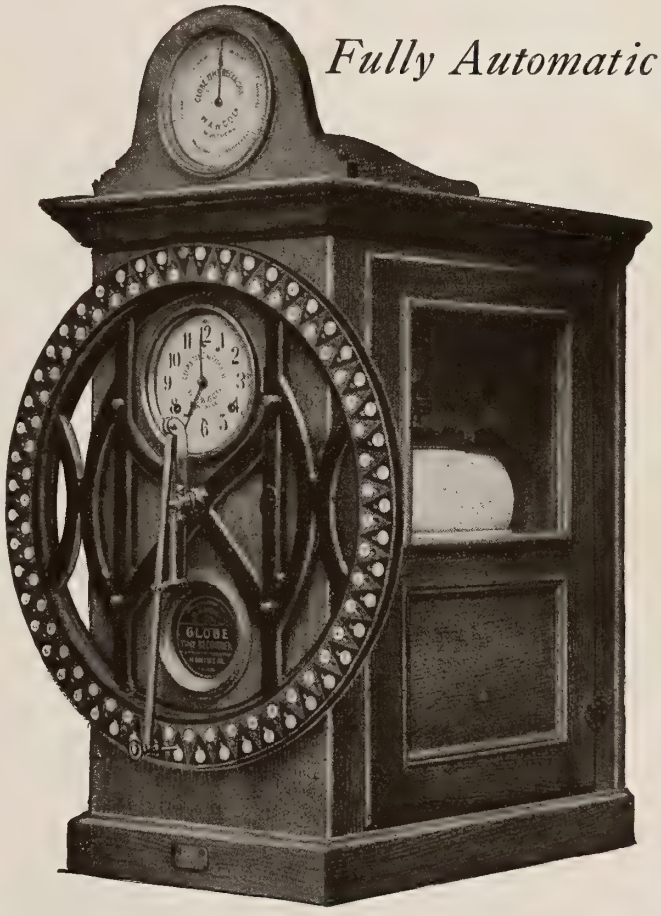
play no favorites. Its records are automatic. Each man makes his own record and cannot dispute it.

You need pay attention only to the RED figures when making up payrolls — all others are full time.

In face of competition you cannot afford to be without this great and only MECHANICAL check on the labor-time you buy.

It's as fair to the employee as it is to the employer.

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We maintain a Service Department at our factory that is at the call of our users at any minute. This Department employs only expert mechanics, thoroughly trained in the mechanism of all our Recorders. We urge our customers to have their Time Recorders inspected at regular intervals—as no piece of mechanism is proof against abuse.

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the way, and for that reason I am appealing through the press as the officer commanding in this district to fill up these battalions when we propose to go on with other efforts. I have nothing further to say, gentlemen. I thank you very much for your invitation to be here. I have listened to the report with great interest and I will listen to the remarks that fall from the experienced gentlemen who I see before me, with still greater interest, and we will make notes of such as we think we can put in force here and will carry them out to the best of our ability.

"I sympathize with the manufacturers in their efforts to play the double role of loyal citizens giving up everything and supplying at the same time the very much needed munitions which we all know are so urgently needed at all times and the whole time at the front. I said to the Toronto people that I was afraid that the manufacturers would have to recruit and let their men go until it really hurt them. It appears you have now reached the stage when it does really hurt and that, gentlemen, is the only true test, because those of us who are in the service, many in fact, I venture to say a very large majority have given up something equally substantial in their own private businesses and in their own private lives to the sacrifices which you gentlemen are called upon to make in your businesses. (Applause).

"Will you hear a few words from Lieutenant-Colonel Williams?"

Lt.-Col. Williams.

"Mr. Chairman, and Gentlemen, I have been guilty of the charge made against Sir Sam Hughes, I have been "talking" too much. I appreciate as chief recruiting officer the splendid service rendered by the manufacturers and all bodies in this division. We have met in every case with consideration and sympathy as far as you felt free to give it. We required eleven thousand men, otherwise some battalions are kept back in the country places and do not receive that training that should be secured in camp services. We should be glad if by some means or other we can get your co-operation in filling up these battalions at the earliest opportunity possible. It will not be helpful to recruiting to have these men in the country places and towns all through the summer. If we can by a very earnest practical two or three weeks' campaign fill every battalion then every battalion in place of lying around simply recruiting would spend their time in the most profitable form of training in camp life."

Brigadier General Logie: "Let me say that this city and valley will be given a rest then as far as I am concerned for awhile."

Lieutenant-Colonel Williams: "We would be very grateful if it was possible in this meeting or by some means to be thought of by you, if an inspiration, an impetus, could be given towards securing at the very earliest date the completion of our battalions. Safety first. We are quite conscious of the need of industrial life, but if our front line is not made perfectly safe and strong then all our gains, should that line break down, are free gifts to the Huns. I thank you gentlemen."

Mrs. Willoughby Cummings.

"Mr. President and Gentlemen: I think it was most fortunate, at least I feel it so, that we were able to hear that splendid report which has just been given, and I feel almost as if we ought not to take up any more time except to say Amen to the whole of it, except that we would like you to add in some way or other the women—put them in somewhere. In that report mention is made of our Women's Emergency Corps which was organized last January to help recruiting in two ways, first by an educational campaign amongst the women, whom we heard were keeping men back, and secondly, to register women who would be willing to give national service.

"Now, in this registration we have had two things very clearly in view all the time, one was we did not want to take any man's place at all; we wanted the vacant places to be filled in the order mentioned in your reports, by returned soldiers, by men not physically fit, and then, if there were still vacancies, by women. We also have had clearly in view that it would be no real help to the country to disturb industrial conditions further than they are disturbed now by taking women out of factories and putting them into something else, so our appeal has been to the women, to the so-called leisure class (we haven't any in Canada), but the women not doing industrial work, and I am glad to be able to tell you hundreds of women have registered, college graduates, women in homes, and so on, to do any sort or kind of work they were capable of doing, and their one aim and object straight through has been to release men to go to the front. (Applause).

"We felt the time had come to press the matter still further and last Monday night we had a marvelous gathering in Massey Hall, over 3,000 women gathered there to express their feelings, first to commemorate our brave men who have been fighting for us by air, seas and land, and secondly to press forward this matter of national service both for men and women. We passed a resolution which we have sent to the government asking for the very thing you are asking for, universal registration, and we also passed this resolution:—

"Whereas the call for 500,000 men from Canada to serve with the colors of the Empire must result in a shortage of male labor in the Dominion, and whereas the call to our patriotic service comes as insistently to women as to men, therefore be it resolved, That we, women of Toronto, do hereby pledge ourselves to do our utmost by our influence and personal service to set free every man eligible for enlistment; and that copies of this resolution be forwarded immediately to the Dominion and Provincial Governments, to the City Council of Toronto, the Retail Merchants' Association, the Trades and Labor Council and to any other bodies whom it may concern, and be personally presented by a delegation to the Canadian Manufacturers' Association now in session in Hamilton."

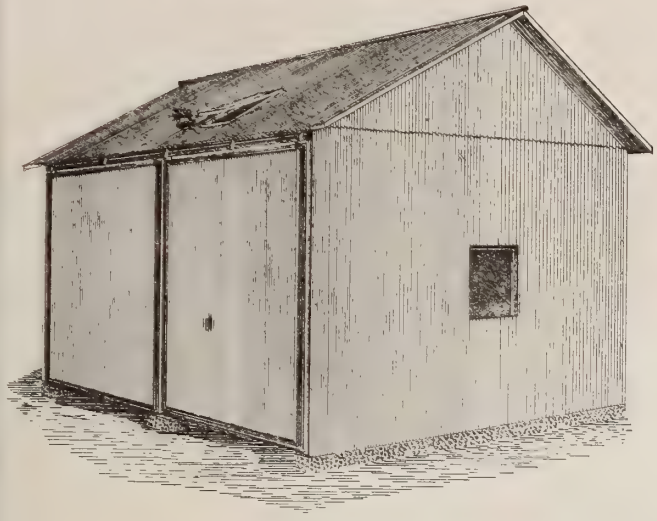
"Now gentlemen, while of course, we have no right to speak for any other women outside of Toronto, I would like to say what the women in Toronto are willing to do, the women from the Atlantic to the Pacific are willing to do; they are registering in Montreal, in Winnipeg, and all over, and the women are willing to come forward and help, and I can only say that if our services are not made use of, it is through no fault of the women." (Applause).

Mrs. Plumptre.

The President then called upon Mrs. Plumptre.

Mrs. Plumptre: "The point on which I am asked to speak is this, that in putting the claim of the women to be used in national service before the manufacturers we are asking the manufacturers of Canada not to start on any new trail but to follow one which has been already blazed for them by the manufacturers of France and Great Britain. The manufacturers of France have shown, as every one in France has shown, a magnificent spirit of self-sacrifice and enterprise in everything that is connected with the war, and in this way they have utilized the services not only of every man who could be had in France, but every woman too. Not long ago a special commission was sent from England to inspect the conditions in France in regard to munition works, and this commission when it came back reported very fully and it reported from one point of view that the investigators found that the men of France had welcomed the assistance of the women and are aiding them in every possible way. The commission points out the significance of this fact, inasmuch as the introduction of women into munitions work was with the aim not only of increasing the output but freeing the men

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Special Machine Screws and Rivets in Brass, Copper, Aluminum, Bronze and Steel

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for military service. That which is true about munitions is true also of all work in France. Women have taken upon themselves every kind of work almost without exception which was formerly supposed to be impossible for them to do. In some cases it was better that they should not be called to do it, but when so much is at stake in the country the women do not consider their own health.

"In Britain the cry has been: Look at France; and the manufacturers of Great Britain have looked at France to such purpose that they have grown like France, and they have also mobilized their factories and re-organized their industries and business, in order to avail themselves of the services of women in order that the whole nation may put forth its best strength. In England as some of you have seen with your own eyes, you might say almost every women is in uniform doing some kind of work or other, feeling herself a part of the national organization, not only doing the spectacular things which are easy to see, and perhaps delightful to do, but the drudgery work.

"We are asking you only to believe that the women of Canada are as willing and able to work in the factories and in business lines, in retail business and on the farm, and on the fruit farms and gardens, and in the industrial and manufacturing work of Canada to exactly the same degree as the women of France and England are able to do; and we only ask you to give them and us the opportunity to show, if we have the opportunity, that we can make good." (Applause).

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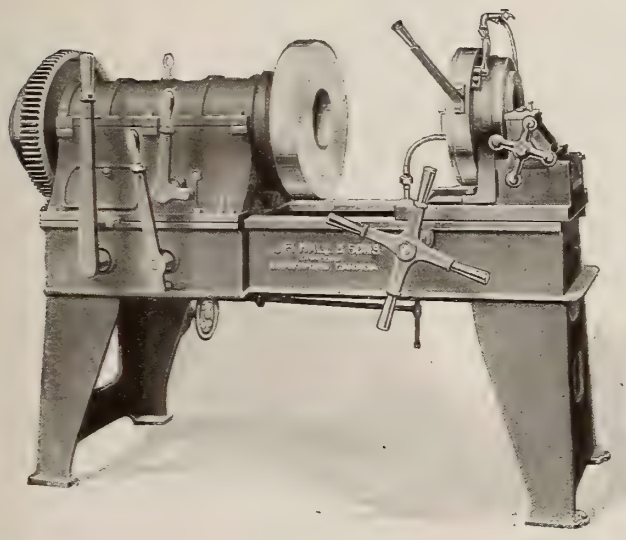
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Mrs. Huestis.

The President then introduced Mrs. Huestis.

Mrs. Huestis: "Mr. President and Gentlemen, your very able report of this morning has made it very easy for us to bear the message to you from the women of the City of Toronto. It was so concise, it covered the point so splendidly, and I would look for it a very earnest welcome from the citizens of Hamilton.

"When the war first broke out no one estimated just what the women's force was in Canada and what that women's force was capable of doing. We have done quite a work in one way and another, and to-day we come up from our city to you, representing the Canadian Manufacturers' Association, with a message that there is still an unutilized force of women's power in this Canada of ours at your service, if you as manufacturers will only utilize that force. The men behind the Red Cross movement have candidly admitted that they did not at the outbreak of the war estimate for one minute what woman was capable of doing, but when I tell you, since the war broke out and up to the present time, woman has made in money value four and one-half million dollars of supplies into things for the Red Cross, and comforts for the soldiers and so forth, without estimating her money value put into them, can't you grasp some of her possibilities?" (Applause).

"May I read for one moment the result of utilization of some of this work by Great Britain. The statement of Sir George Paish is not to be quoted lightly because he does not make light speeches, but he says that the British nation has nearly succeeded in maintaining its productive power, despite the withdrawal of approximately four million men

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EXCHANGE—Domestic and foreign Exchange bought and sold.

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Agents and correspondents
in all the world centres.

PELEG HOWLAND . . President
E. HAY . . . . General Manager

from its industries. Sir George is not given to the making of random statements. When he says that the annual income of Great Britain has increased about three billion dollars since the outbreak of the war and is now fifteen billion dollars a year, it may be assumed he has facts to back up this assertion which he makes. How has this economical miracle been wrought. The greatest contributing cause has been the speeding up of industrial processes, and you know much more about that, gentlemen, than I do; and another factor has been the introduction of hundreds of thousands of women into the factories devoted to the manufacture of steel and the production of munitions of war.

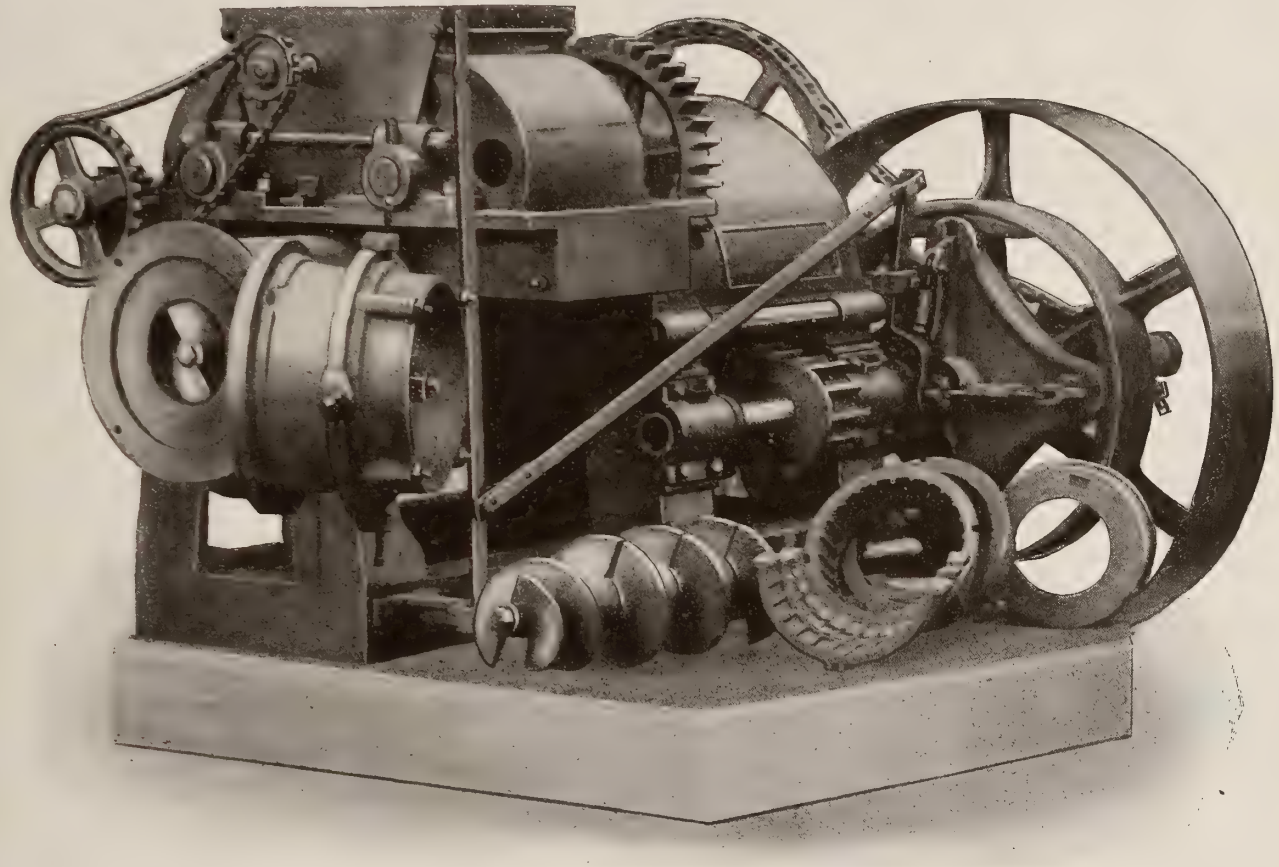
"Now I am going to speak for one moment of something that is not quite so popular in some quarters, yet I take it, gentlemen, you are extremely fair as loyal Canadians, and that is on the subject of woman's wages. Lieutenant-Colonel Williams, in his public speeches, is very fair to us as women and he has been heard to say on more than one occasion he hoped woman's service would get just recognition, and for that remark we as women are indebted to him. Gentlemen, there is not only fairness but there is loyalty behind the request of ours for equal pay for equal work for these women who stand knocking at your door. Let me tell you why I say loyalty. If, in the first place, we should undersell the man who is now at the front, and whom we hope to God will return to us and to his position, it would not be fair, it would not, we claim, be loyal—anything but loyal, it would make it extremely difficult for that man to command his former wage. It is not fair to the women, it is not British fairness to ask the women to do the same work as the man at a lower wage, and I sincerely hope that if you put women into your factories, which I hope you will, if they do not give the proper service you will not pay them for it, but if they give the proper service and measure up to the fitness of the men, and I think they will with a little training, then I hope and pray that you will bear in mind loyalty and fairness when you add up your wage roll.

"Now we know that those women will not compete after the war with the men, for this reason, that history tells us that woman has always gone back into her home after her war service has been over. We have had that tested out in Canada in 1812, and she went back. A great many people say it is well, but if you do what you are wanting to do my wife is not going to have a cook. Well, I just want to say to the poor hungry man who makes that remark that if his wife's cook realizes that her mistress is out doing fine patriotic service for the country, that cook is not going to desert the frying pan, but if she realizes that she can do more than her mistress is doing, then I say to her, go on out, the country needs you. That is the answer."

Discussion.

Mr. Henderson opened the discussion on the report of the special committee by urging that it did not go far enough. He would say that the resolution should be made stronger, and moved that it read: "That a proclomation be issued requiring every man of eighteen years or over to register." All his life he had been opposed to conscription, but he had changed his mind in the last few months. He would further move, seconded by Mr. Shaw, "that the members of the Canadian Manufacturers' Association, at their annual meeting held in Hamilton, express to the Government of the Dominion of Canada its firm conviction that fighting for one's country is the supreme duty cast upon all men in time of war, and furthermore, that the burden of such service should be borne equally by all properly qualified men of the nation, and this meeting desires to express its approval of any scheme, whether under the Militia Act or Defence of the Realm Act or otherwise, for the complete and efficient mobilization of the entire resources of Canada in men and ma-

MADE IN CANADA



The New and Improved Kells Combined Machine

For Brick, Tile and Hollow-ware

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The knives form a continuous auger and run in a ribbed cast iron lining which can easily be replaced. Any of our No. 2 Kells machines can have this new attachment put on at a reasonable cost.

We also manufacture a full line of sand stock brick machinery, pugmills :—right and left hand side delivery, end and bottom delivery, square or bevel gear, any length from 4' up. Brick moulds any size made to special dimensions, barrows, trucks, clay cars, automatic cut-off tables for brick and tile, grate bars, kiln doors, kiln irons, steel rails and switches.

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terial, which in the opinion of the Canadian Manufacturers' Association should be placed unreservedly at the disposal of our country."

Colonel Hatch thought the latter motion or amendment should be presented as a recommendation, and that a committee should be named to consider what would be best in the interests of the Association to do.

The President then put the amendment moved by Mr. Henderson, that the clause reading "That a proclamation be issued calling upon every man of eighteen years or over to offer his services to the State," be altered to read "That a proclamation be issued requiring every man of eighteen years or over to register." On a vote being taken, the amendment was adopted and the report accepted as amended.

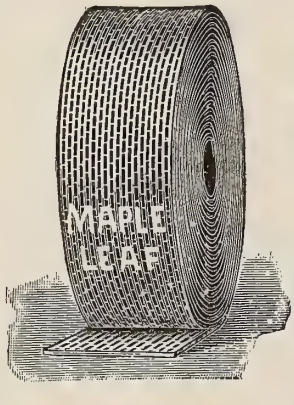
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We have storage space for rent in some of our Western warehouses, particularly at Winnipeg, Saskatoon, Edmonton and Calgary. All of these buildings are served by private railway sidings. For further information address—Grey-Campbell, Limited, Moose Jaw, Sask.

EDUCATION—EXPERIENCE.

One is apt to forget, in our day of widespread schools and colleges, that books are not the only means of education; that many men have learned, and still do learn, more by turning the leaves of the book of experience in their chosen trade than they would gain in the formal institutions established for that end.—*Charles L. Nichols.*

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GREAT WASTE OF ENERGY.

Much of the working capacity of men is wasted because their superiors keep them doing little things that are far below their ability. One often sees grown young men working at the elbow of a manager and being employed on errands and details that a boy might do. The manager is sometimes merely thoughtless in the matter. He wants his office-boy work well done, and gives it to a man to do. A manager in turn often receives a lot of little nothings from the man above him, which he must attend to himself because he was asked to, when a young man might do them just as well. An expert is often asked to take on routine that is far below his normal plane of work—even while others are being deprived of growth for want of that very work.

It is true that details are often very important, but that is no reason for giving a man a boy's work This spirit in an organization causes a great waste of energy. It is one of those expenses that do not show on the ledger. There is no account entitled, "Ability paid for but not used," but there are hundreds of items that might properly be entered under that head. Employers and managers may well bear in mind that keeping a man busy at the time does not necessarily mean getting the most out of him. Let them rather consider the more valuable things he might be doing.—*Dodge Idea.*

A CONFESSION OF WEAKNESS.

A manager's value to a factory is not always in proportion to the influence of his personal presence. Sometimes the ability to leave a business for a time and have it go on as smoothly as ever is the best test of control over it.

A Pennsylvania manager was taking an extra hour away from his work one noon, and remarked to a friend, with apparent pride:

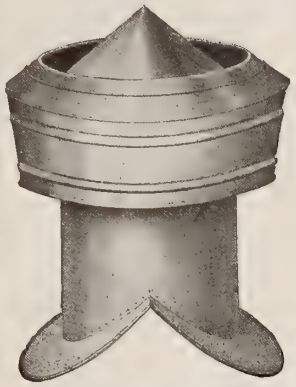
"I must be going back, or everything will be at a standstill. I can't leave the plant for two hours without it causing a difference in the work. It doesn't take long for things to be going at loose ends unless I am right there to watch them."

This man, trying indirectly to raise himself in his friend's estimation, was really confessing his own weakness and laying bare his misconception of the functions of a manager. The humor of the situation is apparent when we remember that many of the owners and managers of vast industries are able to be absent from their desks for weeks and even months at a time.

The good organizer, unless he is limited to poor material, is usually the man who makes his own personal presence less and less of a necessity to the harmonious working of the system.—*Ex.*

"Metallic" Building Materials

"Halitus" Ventilators



Create splendid updraft.

Prevent down-draft.

Weather-proof and well-nigh indestructible

No right angles.

No sharp bends.

The air flows as easily and naturally as water.

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Manufacturers
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The Toronto Carpet Mfg. Co. Limited
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WILTON CARPETS, SQUARES *and* RUGS
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$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

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Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO. ONT. CANADA

PUBLICITY

When the class of goods which you manufacture is under consideration, does the buyer at once think of your name? Consider what advertising has done for fountain pens.

TWO GOLDEN DAYS.

There are two days of the week upon which and about which I never worry, two care-free kept sacredly free from fear and apprehension.

One of these days is Yesterday. Yesterday with all its cares and frets, with all its pains and aches, all its faults, its mistakes and blunders, has passed beyond the reach of my recall. I cannot undo an act that I wrought. I cannot unsay a word that I said on Yesterday. All that it holds of life, of regret and sorrow, is in the hand of the Mighty Love that can bring sweet waters out of the bitterest desert—the love that can make the wrong things right, that can turn weeping into laughter, that can give beauty for ashes, the garment of praise for the spirit of heaviness, joy of the morning for the woe of night.

Save for the beautiful memories that linger, sweet and tender like the perfume of roses, in the heart of the day that is gone, I have nothing to do with Yesterday.

And the other day I do not worry about is To-morrow. To-morrow, with all its possible adversities, its burdens, its perils, its large promises and poor performance, its failures and mistakes, is as far beyond the reach of my mastery as its dead sister, Yesterday. Its sun will rise in the roseate splendour, or beyond a mask of weeping clouds. But it will rise. Until then the same love and patience that held Yesterday and holds To-morrow, shine with tender promise into the heart of To-day. I have no possession in that unborn day of grace. All else is in the infinite keeping of that Infinite Love that holds for me the treasure of Yesterday, the love that is higher than the stars, wider than the sky, deeper than the seas.

There is left for myself, then, but one day of the week—To-day. Any man can fight the battles of To-day. Any woman can carry the burdens of just one day.—*Robert J. Burdette.*

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you should hold ought to take place in your office with a Hydro Engineer in attendance. You'll get a report on your present power plant and what it is costing you, and you'll also learn how much money Hydro can save you.

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Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

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CANADA

TO

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Regular monthly sailings from Montreal in summer and St. John in winter, calling at Adelaide, Melbourne and Sydney (Australia), and Auckland, Wellington, Lyttelton and Dunedin (New Zealand). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

The New Zealand Shipping Co.

LIMITED

213 Board of Trade Building, Montreal

PERSONAL MENTION.

The Manitoba Rolling Mill Company, Limited, have appointed Mr. L. T. Walls their general sales manager, he having resigned from the Steel Company of Canada, Limited.

At a meeting of the board of directors of the Remington Arms Union Metallic Cartridge Company, held June 6th, the following officers were named:—Chairman of the Board, M. Hartley Dodge; President, S. F. Pryor; Vice-Presidents, C. L. Reierson, I. S. Betts, C. C. Tyler, George Bingham; Treasurer, W. F. Lawrence; Secretary, George Bingham; Assistant Treasurers, C. W. Many, W. H. Nolan; Comptroller, Howard Berry.

NEW MACHINE WORKS.

Rapid progress is being made with the construction of the McAvity machine works on the Marsh Road, St. John. This plant will be ready for the manufacture of munitions and general machinery on August 1. It is the intention to concentrate all the firm's brass and steel plants on the new site.

A WELL-ILLUSTRATED BOOKLET.

Experienced advertisers are aware of the great effectiveness of illustrations. The average man is attracted by an interesting picture, when he would pass over a page of letterpress without paying it the slightest attention. Stone & Webster Engineering Corporation, constructing engineers, New York, Boston and Chicago, have had this point in mind in getting out a small book on Gas Plant Construction. It is almost entirely a picture-book, the reading matter being confined to a few pages of very condensed description. The plates used are beautifully printed on super-calendared paper and are most effective in showing the various points of the installations.

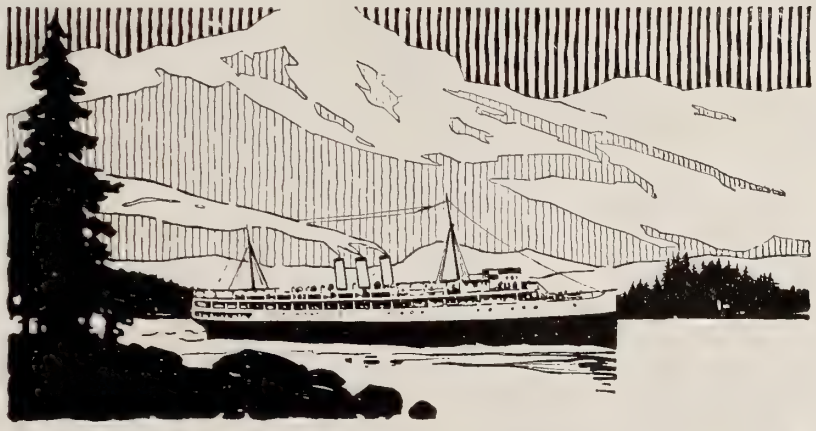
MILK PRODUCTS FACTORY AT BURFORD.

The Canadian Milk Products, Limited, Mail Building, Toronto, announce that a property has been secured in the village of Burford, Ont., for the erection of a milk product plant. This plant, it is claimed, will be unique in building construction for several reasons. For example, the walls of the building will be built of 8-in. x 10-in. x 16-in. vitrified salt glazed rock face tile. The building will be one storey construction, with a floor area of approximately 160 ft. x 100 ft. The roof will be of wood and finished with tar and gravel.

The machinery and equipment of this plant will be the most up-to-date obtainable, built especially for the production of powdered milk. This company already have two fine plants in Canada, at Brownsville, Ont., and Belmont, Cnt., but these will be excelled by the Burford plant. All machinery and apparatus handling the liquid milk will be porcelain lined, for sanitary reasons. All apparatus which will handle the powdered milk after it has passed beyond the liquid state will be constructed in the most sanitary way for handling and production of such an important and staple food product.

BE TACTFUL.

Talent is something, but tact is everything. Talent is serious, sober, grave and respectable. Tact is all that and more, too. It is not a seventh sense, but is the life of all the five. It is the open eye, the quick ear, the judging taste, the keen smell and the lively touch. It is the interpreter of all riddles, the surmounter of all difficulties and the remover of all obstacles. Tact is a wonder worker.



Alaska—

The Land of Sapphire Glaciers

A 2,000 mile, protected, inland nearly all the way, nine day round trip passage on up-to-date steamers at moderate cost.

One Hundred Norways in One

Fjords, snow capped mountains, old mines and totem poles, romance and the Midnight Sun. Travel by

Canadian Pacific Steamers

from the beautiful land-locked harbor of Vancouver.

For further information apply to any Canadian Pacific Ticket agent, or

W. B. Howard, District Passenger Agent, Toronto

Superlastic The Rust Preventer

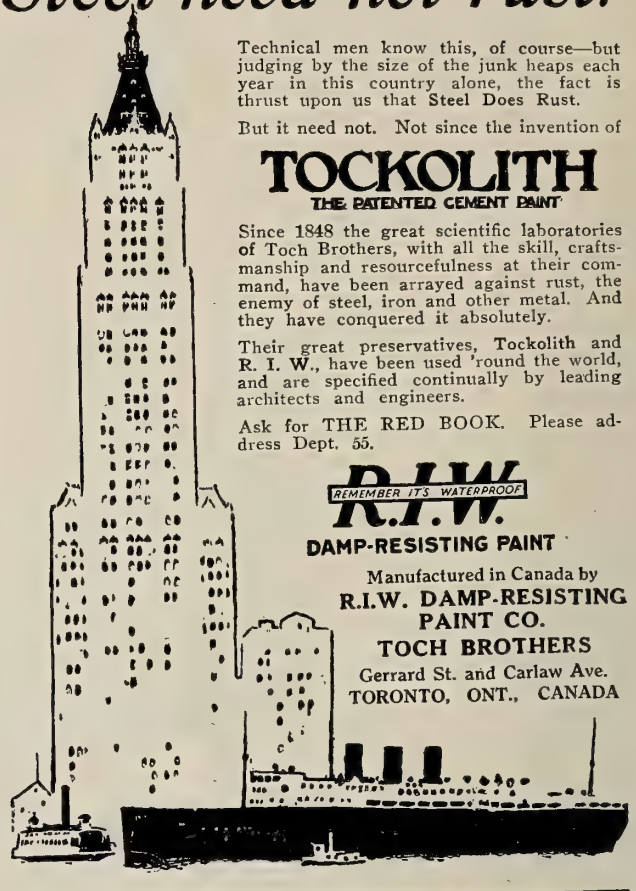
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Steel need not rust!



Technical men know this, of course—but judging by the size of the junk heaps each year in this country alone, the fact is thrust upon us that Steel Does Rust.

But it need not. Not since the invention of

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THE PATENTED CEMENT PAINT

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Ask for THE RED BOOK. Please address Dept. 55.

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REMEMBER IT'S WATERPROOF
DAMP-RESISTING PAINT

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TOCH BROTHERS
Gerrard St. and Carlaw Ave.
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DO YOU PAINT YOUR PRODUCTS

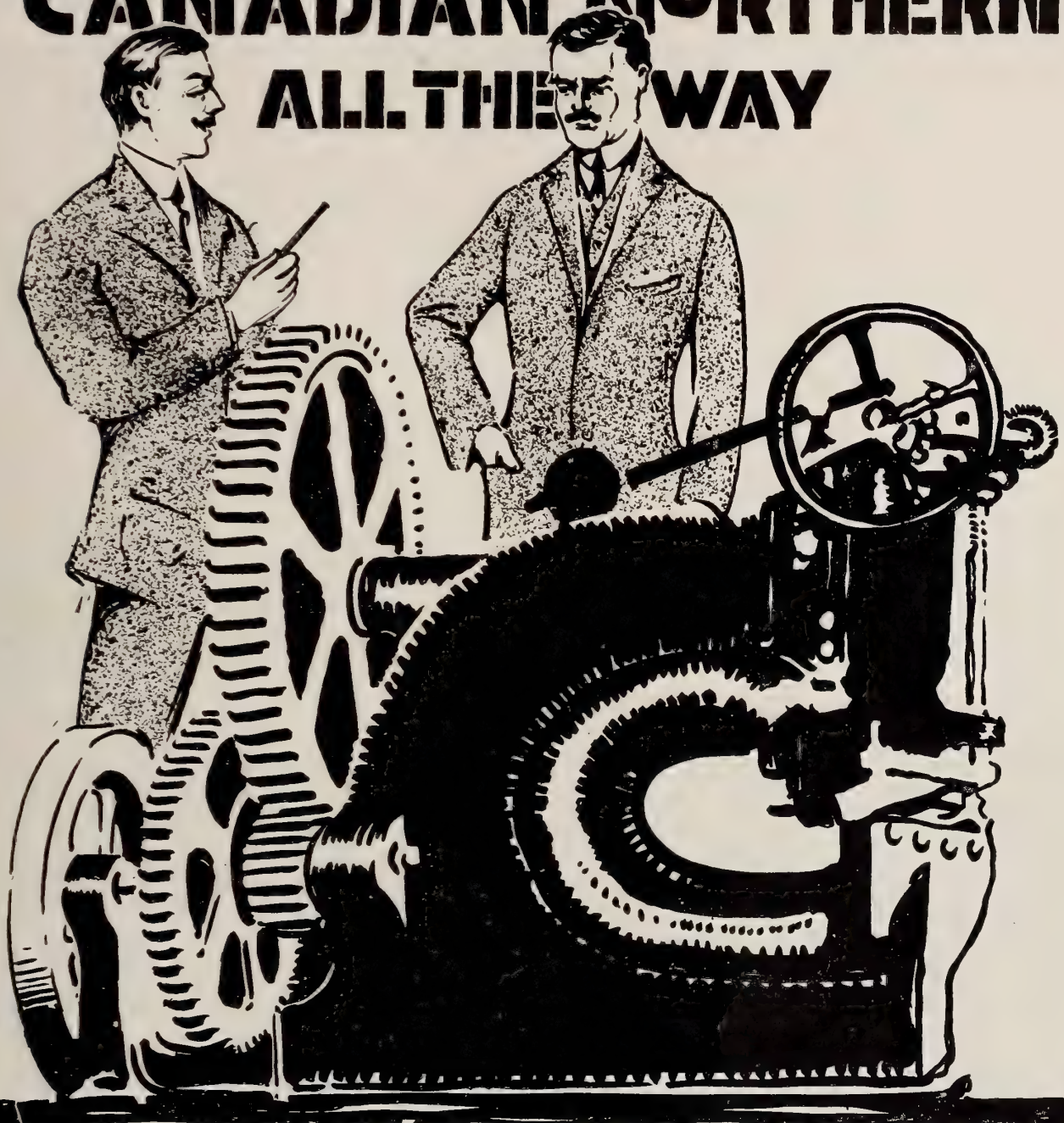
YOUR PAINT PROBLEM is very likely different from your neighbor's. Because he does so and so does not signify that you should do the same. We've consulted with many manufacturers regarding the way they were painting their products and the material they were doing it with. In nearly every case there was a peculiar individual twist to the paint necessities which enable us with our years of practical knowledge of the color and paint business to set the manufacturer right, saving him in many cases and most always improving the appearance and often the life of his product.

It's natural. Paint manufacturers of our experience and organization know more about paint and its application than you do, and we would be very glad to consult with you—to advise you on your painting problems in general without cost to you.

Of course we make everything you can use in the form of colors, paints, varnishes, etc., and make them better than most folks—if you're inclined to buy them well and good, but there will be no obligation written, spoken or inferred.

BENJAMIN MOORE & CO., LIMITED, 2 to 6 Lloyd St., West Toronto
NEW YORK CHICAGO CLEVELAND CARTERET, N.J.

I'LL SHIP IT CANADIAN NORTHERN ALL THE WAY



This prospective purchaser has only one doubt. The machine suits him perfectly. He knows he can get nothing quite so good closer to his plant. But he is fearful that somewhere between the warehouse floor and his plant, two thousand miles away in the west, something might happen to reduce the efficiency of the tool considerably below the 100 per cent. as it stands.

The salesman, possibly without realizing it, is explaining the new doctrine of modern Transportation—Reduction of Risk through handling over straight, flat track. Goods are almost certain to reach their destination, no matter how distant, in an-on-the-factory-floor-condition of efficiency. There is unlikely to be any "come back" on the shipment. The product on arrival will not reflect upon the reputation of the manufacturer who produced it.

The new transcontinental line of the Canadian Northern Railway has easier grades than any other railway of similar length or importance on the Continent of North America. There are no abrupt ascents and descents. There are long tangents of straight track. That spells absence of sharp curvature and a "flat" track,—the basic facts back of the salesman's closing argument:—

"CANADIAN NORTHERN ALL THE WAY"

SERVES MOST IMPORTANT POINTS

Principal Offices: Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria. B.C,

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Calgary.

Estimates are now being submitted by private contractors for the erection of a warehouse, estimated to cost $20,000, for the M. Rumley Company.

The Threshing Machine & Tractor Company announces that it will start the erection of a new plant here in August. Plans are now being prepared.

Medicine Hat.

The Lake of the Woods Milling Company have let the contract for a new mill of brick and concrete construction to replace the one recently destroyed by fire. The new plant will cost approximately $200,000, and will have a capacity of from 1,500 to 2,000 barrels a day.

British Columbia.

Logging in British Columbia is very active, May being the largest month in the history of the industry, upward of 90 million feet having been scaled. The forest revenue for May was $189,000, which far exceeds the total of that month last year, and also 1914.

Wilson Brothers have applied for water rights on the Nimpkish River, Vancouver Island, and intend installing a large lumber mill, with electric power, and will operate their extensive timber limits.

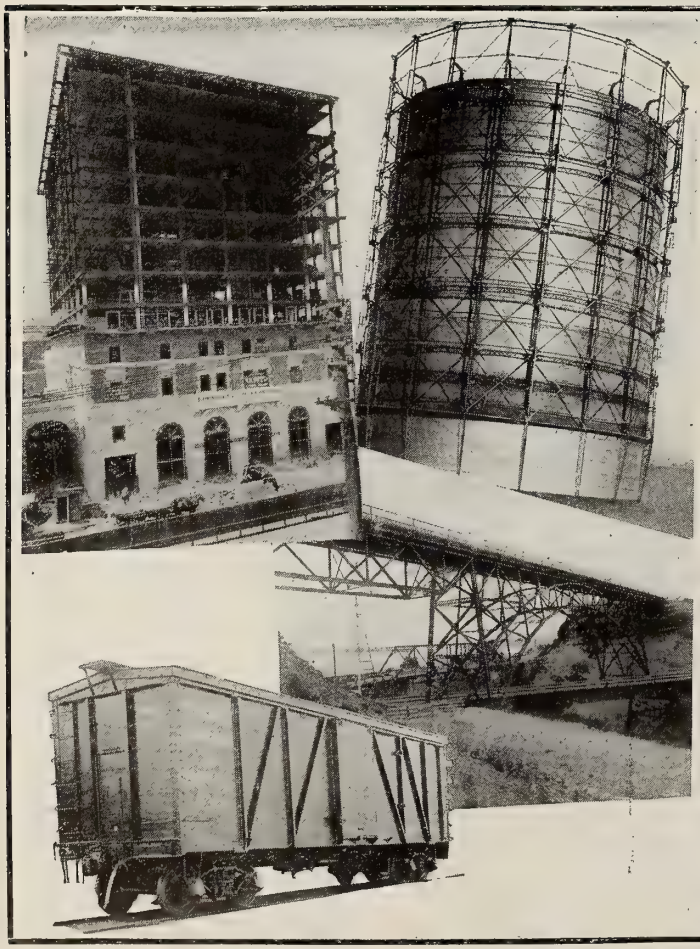
Warren Blyth, of Vancouver, will build a shingle mill at Queensborough, New Westminster.

News from various parts of the province indicates a resumption of activity in the logging and lumber industries, a large number of mills which have been closed down for a long period having overhauled machinery and resumed cutting.

The Provincial Government having guaranteed a bond issue of $40,000, the French Reduction Company will erect an electrolytic zinc refining plant at Nelson, and will also lease the old Fairview plant.

The Wallace Shipyards, Ltd., North Vancouver, have leased the Lonsdale fill at North Vancouver and are installing slips for the construction of three lumber schooners ordered recently, also a 3,000-ton steel steamer ordered for English interests. A large machine shop and subsidiary buildings are being erected and the first keel was laid on June 15.

The Cameron and Genoa Mills, Ltd., of Victoria, have leased a waterfront lot on Victoria Harbor and will put in ways for building two lumber schooners. The Star Shipyards of New Westminster are also figuring on two similar vessels. These are for local interests, and will be 225 feet long, 40 feet beam and 20 foot depth with auxiliary Diesel-type engines to drive 8 or 9 knots in a calm. Capacity will be about 1½ million feet of lumber. About 20 of these vessels will shortly be under construction in various shipyards in the province, and probably several steel vessels also.



Paint for Protection

All structures represent an investment of time, energy and money. Therefore they deserve proper protection by paint—against damage, loss and destruction. The specialty of this company is the manufacture of

PROTECTIVE PAINTS FOR

metal—wood—concrete and plaster surfaces.

No matter what the requirements, a proper paint is made to meet them.

SUPERIOR GRAPHITE PAINT — for bridges, metal and wooden surfaces, roofs, tanks, etc.

D.P.W. HOUSE PAINT — a durable coating for buildings of every kind.

DEGRACO-TONE—a splendid, flat, washable wall finish for interiors.

STA-WHITE — a permanent, light reflecting enamel finish for industrial interiors.

D.P.W. CONCRETE PAINT — keeps concrete from dusting, sweating or showing wear.

D.P.W. products are protecting property in all parts of the Dominion. Write for color cards and complete information.

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OUR VARNISH LABORATORY AND PRACTICAL TESTING DEPARTMENT

are at the command of the Canadian Manufacturers.
We make Varnishes to meet the special
requirements of the factory men.

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The Canada Paint Company

OF CANADA LIMITED

Manufacturers of

Paints, Varnishes, Stains and Enamels

ALL KINDS OF FINISHES FOR EVERY SURFACE

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Agents in all parts of the world.

G. P. SCHOLFIELD, General Manager

Canadian Products, Limited, is a new company formed to take over and enlarge the undertaking of the Duchesnay Packing Co., Ltd., manufacturers of desiccated vegetables. Large orders are on hand for the Allied Governments. A large plant is to be erected in New Westminster in addition to the present plant at Ladner.

H. H. Howard, of Vancouver, has acquired the partially built plant of the Liverpool Canning Co., at New Westminster and will complete it and operate this season. The cannery will have an output of about 17,000 cases.

A big waterfront fire in Vancouver on May 28 destroyed the extensive plant of the New England Fish Co., and the elevator of the Pacific Alberta Grain Co., damage to the extent of $500,000 resulting.

The British Columbia Sugar Refining Co., Ltd., is now importing raw sugar from Formosa, about 12,000 tons now being afloat. The imports up to now have been mainly from the company's own plantation at Fiji, from the West Indies and South America.

The Penticton Fruit Growers' Union will build a modern canning and packing plant to handle this season's crop, and a branch plant at Kaleden.

Western Canners, Ltd., have purchased the canneries at Penticton and Kelowna, and will operate them both this season.

The Occidental Fruit Company have leased the Ideal cannery at Okanagan Centre, and will pack this season.

Machine shops and foundries in Vancouver and Victoria are busy with orders for repairs and refitting for lumber mills, logging camps, mines and general work, and there is considerable shortage of skilled labor in these trades.

Paper-making machinery is being shipped up to Ocean Falls to go into the new mill of the Pacific Mills, Ltd., which will probably be in operation by the fall.

MANITOBA.

St. Boniface.

St. Boniface is to have a new half-million dollar abattoir and packing plant, construction of which is to be commenced very shortly. The promoters of the company which will operate the plant are: A. Talbot, M.P.P., J. H. Tremblay and L. Lalonde.

NEW BRUNSWICK.

Memramcook.

The large wood-working factory and grist mill, belonging to John Gaudet, Memramcook, N.B., was destroyed by fire recently. The loss is estimated at about $20,000.

Moncton.

The Atlantic Underwear Company, Ltd., are extending their premises, under the supervision of R. C. Donald, the cost to be approximately $6,000.

The Dominion Textile Co., Limited, of Montreal, have sold their buildings and real estate in Moncton to the biscuit manufacturing firm of J. A. Marven, Limited. The Textile Company is removing the cotton machinery from the main building, after which the Marven firm will fit it up for biscuit manufacturing on a more extended scale.

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CORRODERS *and* GRINDERS *of* WHITE LEAD

Manufacturers of

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For factory interiors, warehouses and large interior surfaces, this superior finish will save many dollars of expense, from both an economical and sanitary viewpoint. Greater efficiency can be readily obtained, as workmen will be enabled to greatly improve their services, if you "Bring in the Light."

B-H Factory Enamel White will increase the light in your building from 25% to 50%, giving a finish in flat or gloss, as you may prefer, that will be both germ-proof and non-poisonous. This product possesses great spreading and hiding properties, and is easily applied, an amateur workman being able to obtain excellent results. One or two coats, depending on the condition of the surface, will give a desirable finish that will be washable, and after years of service will present a surface suitable for repainting.

The cost is comparatively small, as B-H Enamel White will cover from 700 to 850 sq. ft. per gallon. It is manufactured in all sizes of packages, from barrels to gallon cans.

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Brandram's B.B. Genuine White Lead in Oil has been the recognized standard for years in Canada. This White Lead is the result of continuous manufacture, research and scientific development over a period of 190 years. It combines with Linseed Oil without resistance, and is unequalled for fineness, whiteness, covering capacity and durability.

CONCRETE AND CEMENT PAINTS

Concrete Floor Paints are made in a variety of shades and present wonderful resistance to the constant wear, factory and warehouse floors are subjected to B-H Concrete Proofing is a liquid which dries with a close resemblance to the concrete itself, sealing the surface and resisting moisture, electric and chemical action. It grips the surface and hardens so completely as to become an actual part of the concrete itself.

OUR SERVICE DEPARTMENT IS ALWAYS AT YOUR COMMAND

Do not hesitate to write us at any time for expert advice in reference to the proper materials that you should use or specify for, not only the finish of your factory interiors and exteriors, but with regard to any paint problems which may come before you. Information of this kind will be given you without any obligation on your part.

BRANDRAM-HENDERSON LIMITED *Service Dept.*, HEAD OFFICE, MONTREAL



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is based upon an expert, scientific analysis of a sample of the water you are using in your boilers. The analysis tests and compounding of the correct remedy are conducted in this modern and elaborately equipped Laboratory and Manufacturing Plant.

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AMERICAN BRANCH: SOUTH HAVEN, MICH.

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REFERENCES:

Victoria, B. C.—Metropolitan Methodist Church
Vancouver, B.C.— St. Andrew's Presbyterian Church
Vancouver, B.C.—First Congregational Church
Nelson, B.C.—Methodist Church
Calgary, Alta.—Knox Presbyterian Church
Edmonton, Alta.—First Presbyterian Church
Saskatoon, Alta.—Knox Church
Moose Jaw, Sask.—St. Andrew's Church
Winnipeg, Man.—Grace Church
Winnipeg, Man.—Westminster Church
Stratford, Ont.—St. James' Episcopal Church
Brantford, Ont.—Brant Ave. Methodist Church.
Hamilton, Ont.—St. Paul's Church
Toronto, Ont.—St. Paul's Anglican Church (The Largest in Canada)
Toronto, Ont.—Convocation Hall (University)
Toronto, Ont.—Conservatory of Music
Brockville, Ont.—First Presbyterian Church
Belleville, Ont.—Bridge St. Methodist Church
Ottawa, Ont.—St. Andrew's Church.
Montreal, Que.—Notre Dame Church
Montreal, Que.—St. George's Church (Church of England)
Montreal, Que.—Emmanuel Congregational Church
Quebec, Que.—Holy Trinity Cathedral
Quebec, Que.—Chalmers' Church
Fredericton, N.B.—Cathedral (Anglican)
Moncton, N.B.—First United Baptist Church
St. John, N.B.—Trinity Church
Halifax, N.S.—All Saints' Cathedral
Charlottetown, P.E.I.—Baptist Church
Sydney, C.B.—St. Andrew's Church
Dawson City, Yukon—R.C. Cathedral
New York City—St. Francis Xavier Church
Syracuse, N.Y.—First Baptist Church
New Bedford, Mass.—St. Anthony's Church
Boston, Mass.—Opera House
Chicago, Ill.—Sinai Temple
Evanston, Ill.—North Western University
Kingston, Jamaica—R. C. Cathedral

Electric and Tubular Pneumatic Action. Electric and Hydraulic Motors

NOVA SCOTIA.

New Glasgow.

Steel shipbuilding on a large scale is being inaugurated in Nova Scotia. Work on the erection of the shipyard has already begun near New Glasgow. The site for this important industry is below the plant of the Eastern Car Company's works, on the east river of Pictou. The first steamer to be built will be for the Nova Scotia Steel & Coal Company, under whose auspices the industry is being inaugurated.

ONTARIO.

Barrie.

Brown and Morden, representing a company that is being organized to manufacture condensed milk, are negotiating with the Board of Trade regarding the installation of a factory here.

Berlin.

The Canadian Regal Motor Co., Ltd., are erecting a new factory here.

Brantford.

The Royal Paper Box Company will build a factory at a cost of about $12,000.

The Ham and Nott Manufacturing Company have taken out a permit for the rebuilding of a warehouse to cost $3,000.

The Hampel Paper Box Company are erecting a brick factory.

Bridgeburg.

A site has been purchased here by the Central Macaroni Works, of Buffalo, and they will shortly commence the construction of a large factory for the manufacture of macaroni.

Burford.

The Canadian Milk Products Company, "Mail" Building, Toronto, proposes to build a plant at an estimated cost of $100,000.

Campbellford.

A by-law was carried authorizing a loan of $30,000 to the Northumberland Paper & Electric Co., of this town, to assist it in the rebuilding of its paper mills recently destroyed by fire. The company is proceeding with the erection of a much larger plant than their former one.

Chatham.

The American Pad & Textile Company proposes to build an addition to its premises, at an estimated cost of $30,000.

Collingwood.

It is proposed to establish a factory here for making wood and metal specialties. A syndicate recently organized in this connection is asking the town for a loan of $15,000. F. Kent and J. A. Sinclair, of the Seamen Kent Company, are interested in the proposition.

Elmira.

The Colonial Knitting Company have moved their plant here from Guelph, installing their machinery in the former premises of the Elmira Felt Co.

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

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Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

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OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

TORONTO FURNITURE CO., LIMITED

Show Rooms and Cabinet Shops: 163-187 Dufferin Street, Toronto, Canada

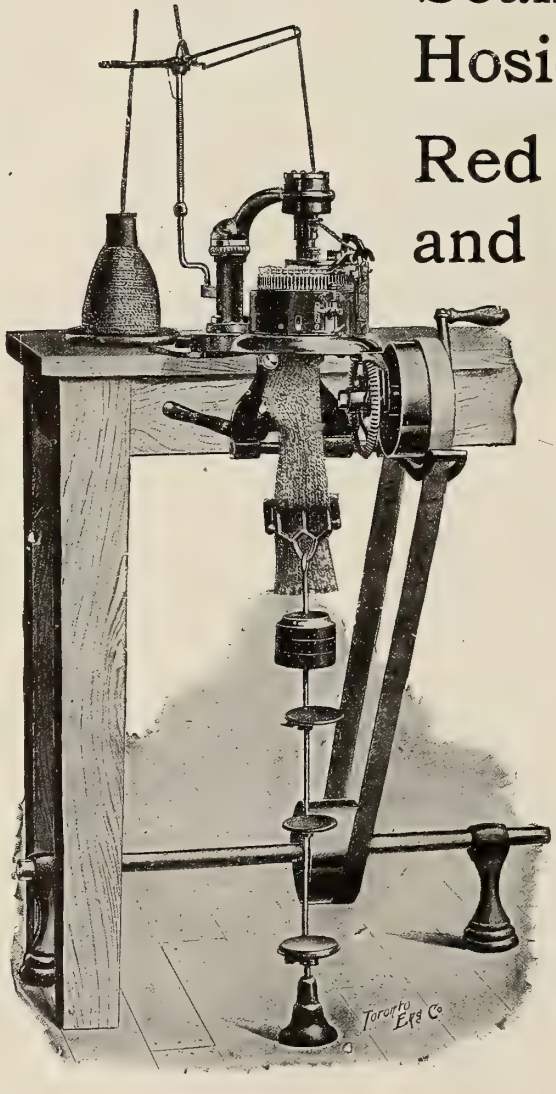
STRUCTURAL DETAILS

Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.



POWER AND FAMILY
KNITTING MACHINES

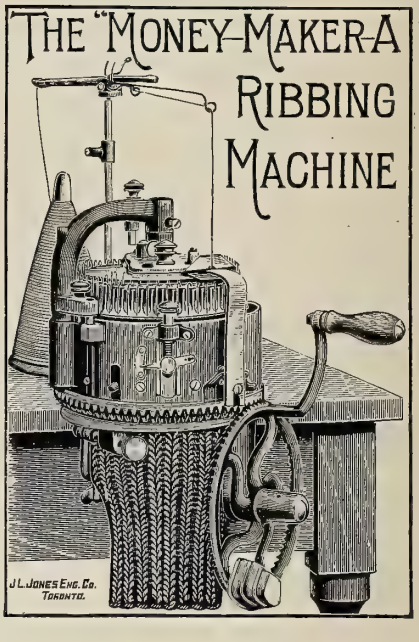
FOR



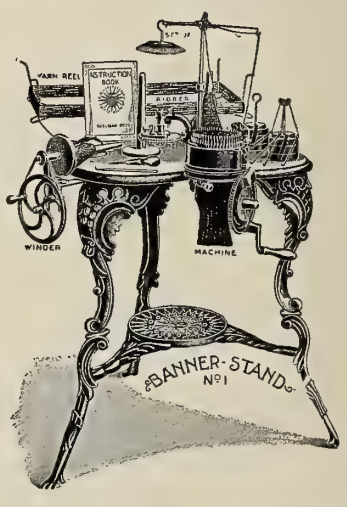
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GEORGETOWN .. ONTARIO .. CANADA

Essex.

The Doyle-Dennert Tractor Company, recently incorporated with a capital of $150,000, purposes manufacturing tractors for agricultural purposes and for scraping roads. Dr. Doyle is President, W. G. Doyle, Vice-President, W. J. Nesbitt, Secretary, and Mildred Dawson, Treasurer.

Exeter.

C. F. Smalley, of the Smalley Manufacturing Company, Manitouac, Wis., is considering establishing a branch factory here in connection with the Connor Machine Company.

Galt.

The Goldie & McCulloch Co. are making an addition to their South Works plant, in the shape of a new power house. A complete new hot water forced circulation heating system is to be installed for heating the present shop buildings.

The Roelofson Machine & Tool Company are building a new plant, which will be equipped for making special machinery and small tools.

Hamilton.

The factory of Lumsden Brothers and also the Jersey Cream Factory, owned by the same firm, was damaged by fire to the extent of $15,000.

A building permit has been issued to the W. A. Freeman Company for the erection of a factory addition to cost $1,200.

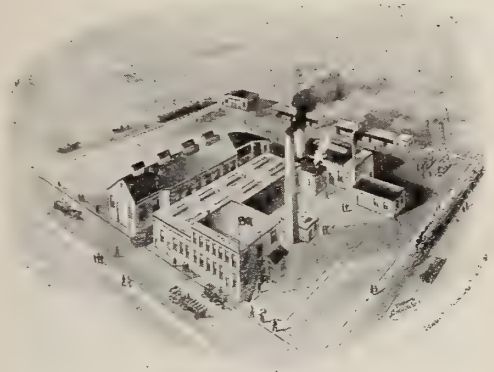
The factory of Ludlam-Ainslie Company has been leased to the Peerless Weaving & Belting Company. Machinery for the manufacture of leather belts, automobile accessories, etc., will be installed.

TANKS FOR PULP AND PAPER MILLS, CHEMICAL WORKS, OIL REFINERIES, ETC.

STEEL STRUCTURES
TO SUPPORT TANKS

WRITE FOR QUOTATIONS

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FOR

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65% of the depreciation of the average car is preventable by the use of a good lubricant.

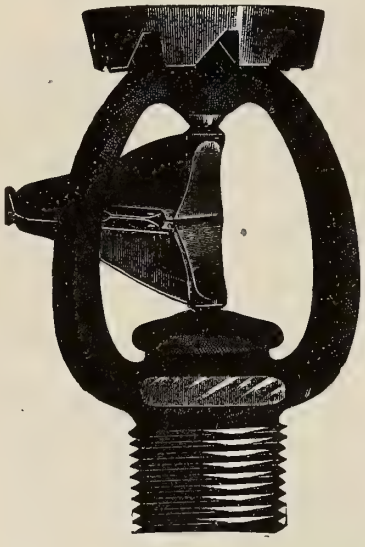
Polarine prevents ***preventable*** wear and tear. It lubricates efficiently under all conditions and deposits a minimum of carbon.

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BRANCHES IN ALL CITIES

T. 212

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We want to equip your plant with

Esty Fire Sprinklers

and show you how to reduce insurance costs 50% to 80%.

IT'S A GREAT BIG MONEY SAVER.

Write:

H. G. VOGEL CO. CANADA LIMITED

169 Duke St., MONTREAL, P.Q.

Contracts for the erection of an addition to the premises of the Canadian Steel & Wire Company have been let. The cost will be $4,000.

A factory of reinforced concrete will be erected here shortly by the W. T. Raleigh Company.

Two buildings are being added to the plant of the Dominion Sheet Metal Company. One is 20 feet by 100 feet for storing metals and by-products, and the other is 40 feet by 80 feet, for additional black sheet storage.

A $100,000 building will be erected on Burlington Street by the F. F. Dalley Company, Hughson Street.

The Hamilton Stamp & Stencil Co. have taken out a permit for a small $1,500 addition to their plant.

Kingston.

J. Merer, a representative of a Toronto firm, has rented the plant of the North American Smelting Company. The plant is being overhauled and the operations of smelting lead are to be commenced in a very short time.

Lindsay.

Two brick ovens, steam boilers and stills have already been installed in the plant of the Hodgson Chemical Company. The company will manufacture wood alcohol, acetate of lime and charcoal.

The general contract for the erection of a factory for Horn Brothers Woollen Co., Ltd., has been awarded to H. T. Hickey, Peterboro. Approximate cost, $25,000.

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Cut your Insurance in half by having us instal an

Automatic Fire Sprinkler System

throughout your Factory, Store or Warehouse.

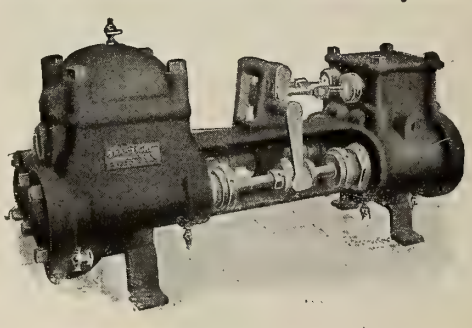


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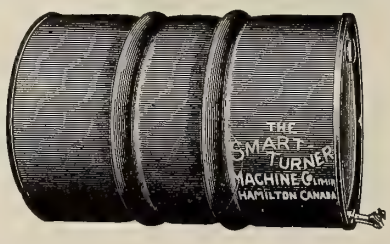
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THE SMART-TURNER MACHINE CO., Ltd.

HAMILTON - ONTARIO

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NIGHT AND DAY



No fire can gain a headway in a building protected by

Manufacturers' Automatic Sprinklers

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FOR
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ETC., ETC

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All our tanks and towers are built to pass inspection of any Board of Fire Underwriters.

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We do all kinds of hot and electro galvanizing for the trade. Our plant is one of the largest in Canada and our charges reasonable. Write us for quotations on your galvanizing work.

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All wipers have been hand selected, hard and starchy parts and buttons, etc., removed, sleeves and other closed parts opened and subjected to a thorough washing, rendering absolutely sanitary.

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SELECT WHITE MIXED COLORED
DARK COLORED

SCYTHES & COMPANY, LIMITED
Manufacturers and Jobbers, Toronto, Montreal

WASHED COTTON WIPERS

Markham.

The Purvis Salts Company, which has been incorporated recently with a capital of $40,000, will erect a factory here for making health salts and mineral waters. A. W. Burk, of Toronto, is president of the company.

One of the largest and most modern mills in York County will be erected by a new company composed of prominent business men of this district. It will be situated at Markham Station, and the cost is estimated at $60,000.

McGregor, Ont.

C. H. Leslie, Amherstburg, contemplates the construction of a plant, to cost $6,000, for the manufacture of brick and tile.

Merritton.

Extensive repairs and improvements are being made to the plant of the Riordon Pulp & Paper Co. here. A new plant to produce bleach liquor is being erected and a bleachery is being installed in the present wet machine building, to bleach about thirty tons of pulp a day. A new wet machine building and shipping room is being added to the plant, besides a new boiler equipment, which will give about fifty per cent. more steam capacity. One of the old ground wood mills has been equipped as a power plant to supply power to the mill. The bleaching plant will be in operation about September.

Milton.

The Toronto Pressed Brick Company and the Medina Shale Brick Company, Streetsville, have amalgamated with the Milton Pressed Brick Company, Milton, Ont., and a company has been incorporated with a capital of $1,500,000. J. S. McCannell is President and Managing Director.

Ojibway, Ont.

A steel manufacturing plant, estimating to cost $20,000,000, is being erected by the Canadian Steel Corporation, Ltd. Work has been started by the Essex Terminal Railway on laying ten side tracks into the property. Docks, wharves, warehouses and mills will be built.

Orillia.

E. Webb & Son have been awarded the contract for the erection of a three-story brick factory building, 80 by 148 feet, for George Forbes, Hespeler, Ont. The estimated cost is between $30,000 and $40,000.

Oshawa.

The McLaughlin Motor Car Company and the Chevrolet Motor Car Company contemplate making extensive developments to the factory here.

Ottawa.

Grant, Holden & Graham will shortly erect a new factory. This will be of brick construction and will cost approximately $30,000.

Penetanguishene.

The Waldon Company, with offices at Winnipeg, Montreal and Toronto, are now manufacturing their Spencer boilers here. Heretofore these boilers were made in the United States. The company's business has grown to such an extent that it has become necessary to establish a Canadian plant.

SHURLY & DERRETT
LIMITED

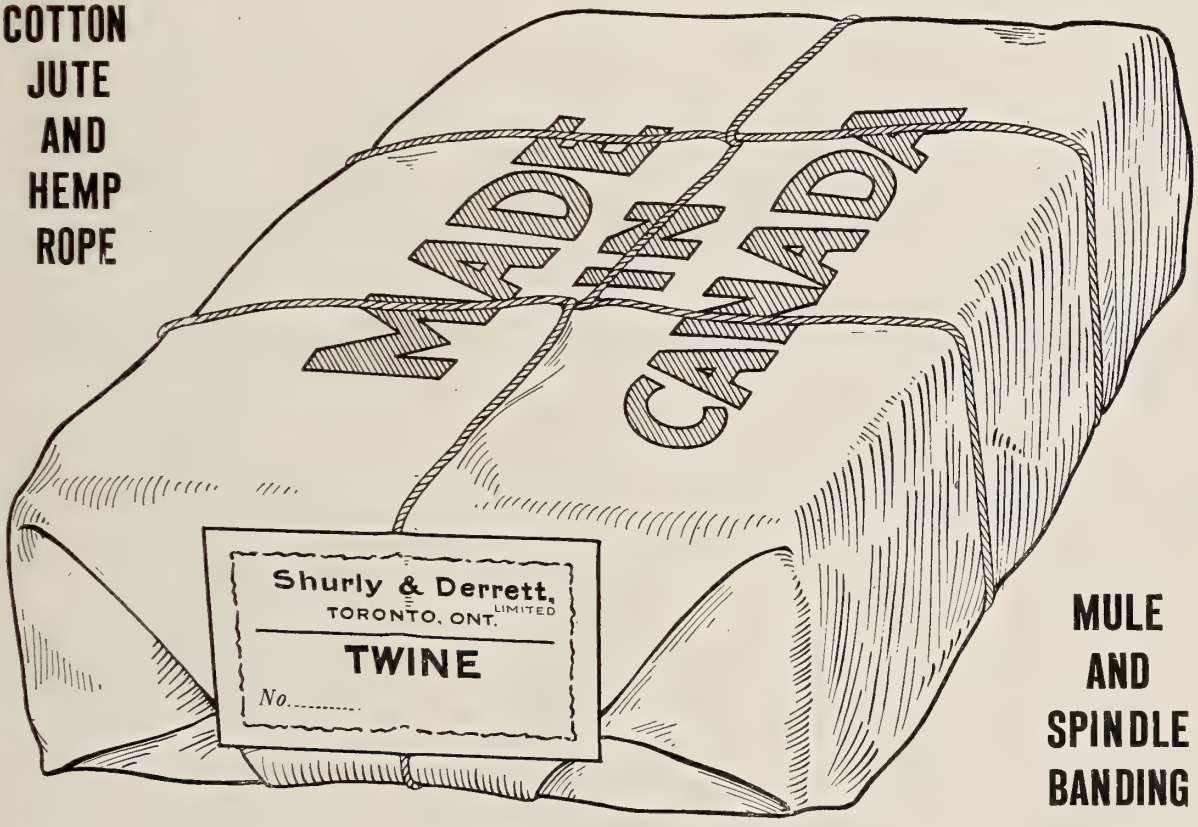
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Manufacturers of

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COTTON
JUTE
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HEMP
ROPE



MULE
AND
SPINDLE
BANDING

Look for this Package

You Have Seen Them

go up and then go down—here to-day, gone to-morrow. Breakfast cereals may come and go, but

Shredded Wheat

like Niagara Falls, goes on forever. It is in a class by itself. There is no substitute. Delicious for breakfast, or for any meal, with sliced bananas, or other fruits.

A Canadian Food for Canadians

The Canadian Shredded Wheat Co., Ltd.
Niagara Falls, Ont.

Toronto Office, 49 Wellington St. E.

Peterboro.

Plans are being prepared by William Langford, Water Street, for a factory for the Bonner-Worth Company. The project is very indefinite at present. The approximate cost is $10,000.

Preston.

Contract for brick work has been awarded in connection with the additions being built to the factory of the Solid Leather Shoe Company.

Renfrew.

The Renfrew Electric Manufacturing Company have commenced the erection of an addition to their premises, estimated cost $5,000.

Sarnia.

The H. Mueller Manufacturing Co., Ltd., are erecting an office building, steel, hollow tile, Roman stone and brick construction, costing approximately, $12,000.

A stone-cutting plant is likely to be erected in Point Edward, with a capitalization of $100,000. The stone from Indiana for the new Union Station at Toronto will be worked up at this plant.

Simcoe.

The Hall Glove Company, Jersey City, propose to erect a textile factory here at a cost of $25,000.

The ratepayers recently voted in favor of a by-law to loan $20,000 to the Unique Shoe Company. It is expected that building operations will be started shortly.

Canadian Red Letter

AND

Export Rye Whiskey

Are the Chosen Brands of Expert Drinkers of

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Vera Soap Powder for Washing Felts

THE OVERSEAS GIFT



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CONTAINING 60 CHICLETS FOR

TWENTY-FIVE CENTS

Toronto.

L. White & Sons contemplate building an extension to a factory on Williams Street, at an estimated cost of $4,000, for which tenders will be called shortly.

A new factory is being erected for Carhartt Hamilton Manufacturers, Ltd., 535 Queen Street East, at an approximate cost of $5,000.

Bowles Lunch, Ltd., have let the general contract for the erection of a bakery, the building to be of brick construction, and to cost approximately, $20,000.

Plans have been prepared for the erection of a bakery for the Ideal Bread Company, 183 Dovercourt Road. The building will be of brick construction, and will cost about $3,000.

The Harris Abattoir Company, Ltd., Union Stock Yards, have had plans prepared for an addition to their premises, estimated to cost $50,000.

The Sheet Metal Products Company are erecting a brick and steel addition to their plant at an estimated cost of $6,000.

The Gutta-Percha and Rubber, Ltd., 47 Yonge Street, have taken out permits for the erection of a number of additions to the company's works in Toronto, construction of which has already been started. One addition is a two-story shop and garage to cost $18,000. A second extension is a two-story brick reclaiming building, the cost of which will be $30,000. The third and largest addition is a four-story factory building, costing $31,000. The total cost of the additions will be about $79,000. The new buildings are being erected on West Lodge Avenue.

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USED EVERYWHERE

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One of the most complete Salt Works in the World—producing practically all of the fine Table, Dairy and Cheese Salt used in Canada.

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Closet Seats,
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Medicine Cabinets,
Everything for the Bath Room.
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Ask for Price List

For round Rods ⅝ to 1½ inch Flat Bands 2 to 6 inches wide
Best Malleable Iron—Prompt Shipments.
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OTTERVILLE, ONT.

Tilbury.

The F. S. Carr Rubber Company, which has been operating here for about four years, is moving its business to Granby, Que., where they have purchased the factory and equipment formerly operated by the Walpole Rubber Company in that town.

Tillsonburg.

The Chatham Malleable Steel Company has taken over the Tillsonburg Metal Stamping Company, which was established here some months ago by J. C. Inman.

Trenton.

It is reported that the Canadian Sprayer Company will build a plant here for making sprayers and gasoline engines

Wallaceburg.

Several thousand dollars damage was done at the Dominion Glass Company's plant recently by the bursting of a furnace containing molten glass.

Welland.

A factory warehouse of steel and brick construction is being built for the Canada Forge Company, Limited, by the Standard Steel Construction Company. The estimated cost is $50,000.

It is understood here that the management of the Canada Foundries & Forgings Company has under consideration further additions to its buildings and plant.

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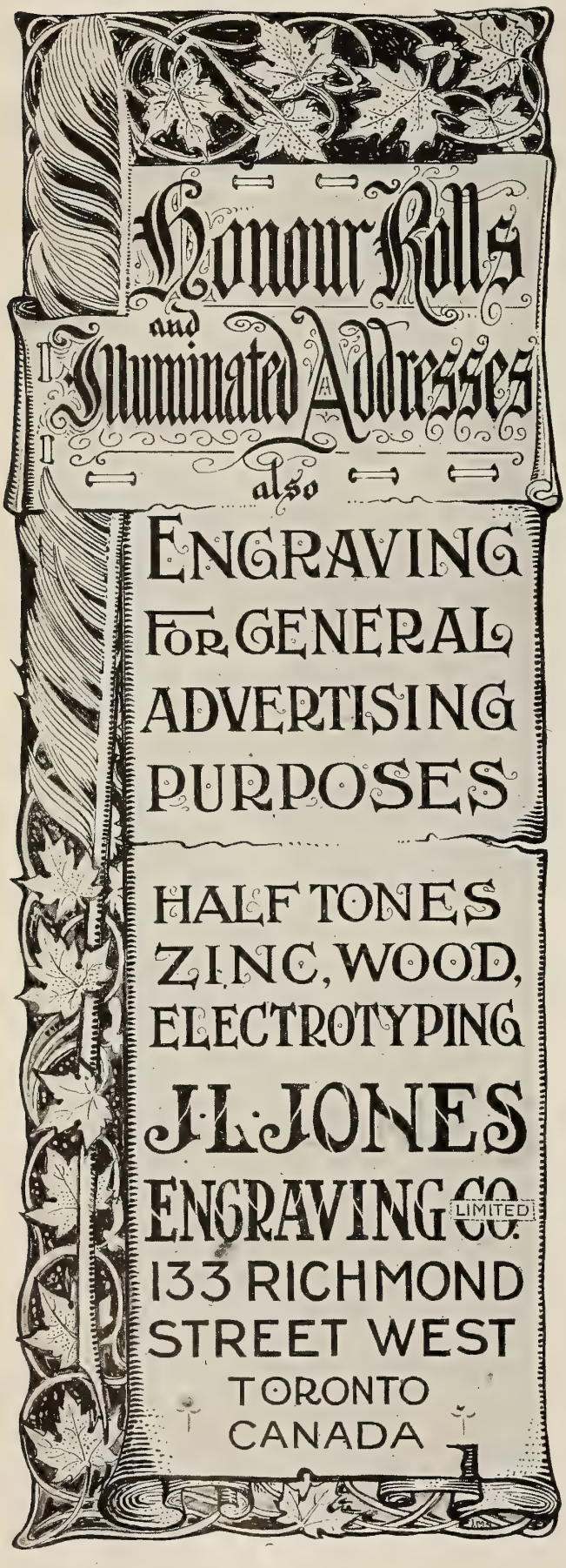
in which our range of styles and colors is absolutely unrivalled. Orders now taken for July and later delivery only.

Our Fall line of MILITARY BRAIDS, SOUTACHES, LOOPS, TASSELS, FROG ORNAMENTS, FRINGES, and other attractive specialties, is now ready, as also our color card of STANDARD SHADES FOR 1916, containing 108 colors, which we expect a run on during this year.

TRADE HONEST MATERIALS JHP PERFECT WORKMANSHIP MARK

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QUEBEC.

Bagotville.

The contract for the construction of a new pulp and paper plant at Bagotville has been awarded to the J. G. White Engineering Company, of New York, under the direction and design of Mr. Hardy S. Ferguson, paper mill engineer, also of New York. The plant is to be of brick, concrete and steel. This plant, which marks a decided step in the pulp manufacturing activities of North-eastern Canada, will embody the latest improvements in design and the initial installation will have a capacity of 120 tons of sulphite pulp per day. The mill buildings will be erected on the shores of Ha Ha Bay on the Saguenay River, and will occupy a space of approximately five acres, and besides the usual rail facilities will be provided with a system of wharves, accommodating ocean-going vessels. It is expected that the plant will be producing pulp early in 1917. Mr. J. E. A. Dubuc, President of the North American Pulp & Paper Company, and General Manager of the Chicoutimi Pulp & Paper Company, will be at the head of this new enterprise.

Beauharnois.

The Howard Smith Paper Company propose building an extension to their power plant.

Fassett.

The Standard Chemical Iron & Lumber Company are building a new factory to replace the one recently destroyed by fire with a loss of $75,000.

H. STROUD
President and Manager

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The Standard Woollen Mills Co. of Toronto, Ltd.

MANUFACTURERS OF

Blankets
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Hull.

An addition, 90 by 150 feet, is being made to the foundry of the Hull Iron & Steel Company, at a cost of $30,000, to be used as a small castings department.

Joliette.

The Joliette Steel Company have purchased a building which is being remodelled for the manufacture of castings by the converter process.

Lachine.

An extension of brick, steel and corrugated iron is being erected by the Dominion Bridge Co., Ltd., at an estimated cost of $10,000; also, a new forge shop at an approximate cost of $7,000.

Longueuil.

Contracts have been awarded by the Armstrong-Whitworth Company of Canada, Ltd., Montreal, for the doubling of their already extensive plant at Longueil. The estimated total cost is $750,000.

Magog.

The Dominion Textile Company will build an extension to the power plant at their mill here.

Montmagny.

The General Car & Machinery Works have rebuilt their plant, which was recently damaged by fire. The plant consists of steel, iron and brass foundries, forging and machine shops, giving a total floor area of 117,000 square feet. A power plant has been installed, having a capacity of 1,000 horse power.

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"A" and "AA" DUCKS

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Employing Ten Thousand People.

Manufacturing White and Grey Cottons, Prints, Sheetings, Shirtings, Pillow Cottons, Longcloths, Cambrics, Ducks, Bags, Twills, Drills, Quilts, Bureau Covers, Towels and Towelling, Blankets, Rugs, Twines and many other lines used by Manufacturers in Rubber and other Trades.

Montreal.

It is reported that the Canada Cement Company has reopened its large cement plant at Exshaw, Alta., which employs about 300 men when working to capacity. It is probable that, owing to the increasing demand for the company's product in the West, the Calgary plant will be started up later on.

It is reported that a $10,000,000 subsidiary company, which will operate exclusively in Canada, has been organized by the Du Pont Powder Company. The company has secured a water power and other properties on the Saguenay River, and intends commencing construction at an early date.

The Canada Stove Company will build an extension to their factory at St. Laurent, near here, at an estimated cost of $60,000.

The British American Oil Company will make an extension to their plant at Outremont.

Regina. **SASKATCHEWAN.**

The Canadian Consolidated Rubber Company will build a warehouse here, to cost about $24,000.

A TWENTY-YEAR GURANTY BOND.

A twenty-year surety bond guarantee will be given hereafter without charge on all Barrett specification roofs of 50 squares or more in the United States and Canada, in towns of 25,000 and over and in smaller centres where the Barrett Company's inspection service is available, provided the roof is laid by a roofing contractor satisfactory to the company and in strict accordance with the Barrett specification dated May 1, 1916, and subject to the inspection and approval of the company.

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NOTICE

The following are the Factory Inspectors for the Province of Ontario:

JAMES T. BURKE, Chief Inspector, Toronto
W. T. E. BRENNAGH, Port Arthur
H. A. CLARK, Toronto
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
A. W. HOLMES, Toronto
ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID,
Minister of Public Works and Highways.

W. C. McGHIE,
Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID,
Minister of Public Works.

D. M. MEDCALF,
Chief Inspector of Steam Boilers.

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"Canadian Club" Whisky

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QUALITY UNEXCELLED

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A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

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*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto. Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
*Canadian H. W. Johns-Manville Co., Toronto.
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, heating
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement See Index, Page 456

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BRONZE, Cored Bars
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Boeckh Bros. Co., Toronto.

BRUSHES
*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co., Welland, Ont.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited. Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS AND CLOCK MOVEMENTS
The Arthur Pequegnat Clock Co., Berlin, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited. Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COFFEE IMPORTERS, Roasters and Manufacturers
C. H. Cochrane & Co., Ottawa, Ont.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited. Toronto.

*For Display Advertisement See Index, Page 456

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED BOXES
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORRUGATED PAPER
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.
Canadian Wm. A. Rogers, Ltd.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited. London, Ont.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

*For Display Advertisement, See Index, Page 456

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*Canadian H. W. Johns-Manville Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peck & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
Gurney Foundry Co., Limited, Toronto.
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, house and office
Canada Furniture Mfrs., Limited, Woodstock, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
Gurney Foundry Co., Limited, Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

* For Display Advertisement See Index, Page 456

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Toronto.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MEATS, canned
The Wm. Davies Co, Ltd., Toronto.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement See Index Page 456

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A. Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement See Index, Page 456

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERWARE
Toronto Silver Plate Co., Limited, Toronto.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*For Display Advertisement See Index, Page 456

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKETS, gray iron and flint rim
*Canadian Link Belt Co., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Sirocco Co., Windsor, Ont.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Pedlar People, Ltd., Oshawa, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Henry Hope & Sons, Ltd., Toronto.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.

TELEPHONE ACCESSORIES
*Northern Electric Co., Limited, Montreal.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Gurney Foundry Co., Ltd., Toronto.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SURFACERS
*Berlin Machine Works, Ltd., Hamilton.

SWITCHBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

THEATRE CURTAINS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSMISSION MACHINERY
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*The Canadian Sirocco Co., Ltd., Windsor, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

TUMBLERS, foundry
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte, Ont.

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
John Morrow Screw and Nut Co., Ltd., Ingersoll.
Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Kerr Engine Co, Ltd., Walkerville.

VALVES, for steam and water
Jenkins Bros., Ltd., Montreal, Que.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
*Dougall Varnish Co., Ltd., Montreal.
R. C. Jamieson & Co, Ltd., Montreal, Que.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada. Ltd., Toronto, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL BOARDS
*Bird & Son, Hamilton, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que

WASHERS
*The Steel Company of Canada, Limited, Hamilton.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATER-PROOF CEMENT COATING
Benjamin Moore & Co, Ltd., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

*For Display Advertisement See Index, Page 456

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.

WHIPS AND LASHES
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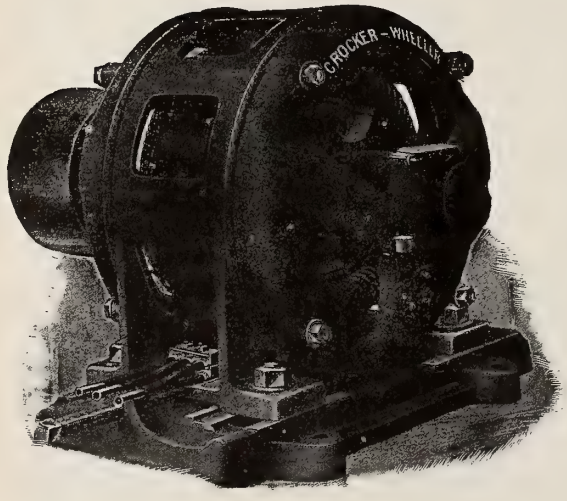
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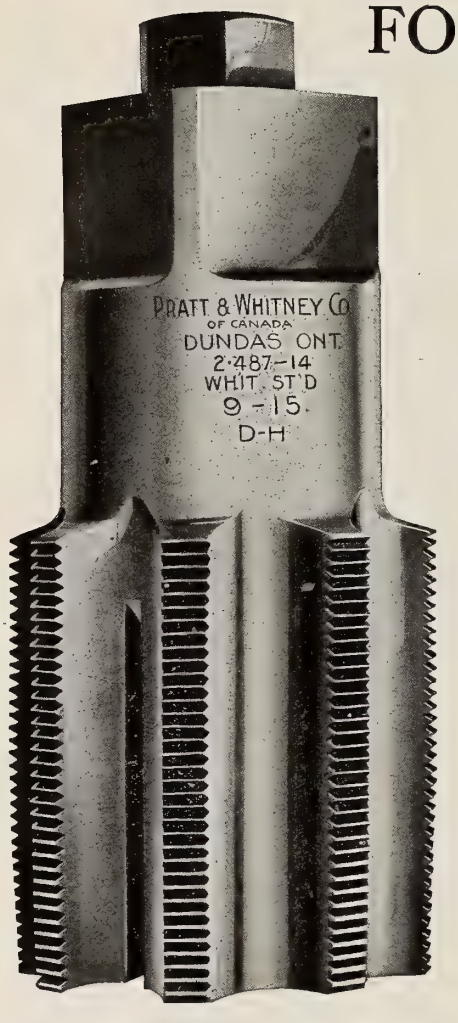
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of Canada, Limited
Dundas : Ontario

MONTREAL
723 Drummond Bldg.

WINNIPEG
1205 McArthur Bldg.

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LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

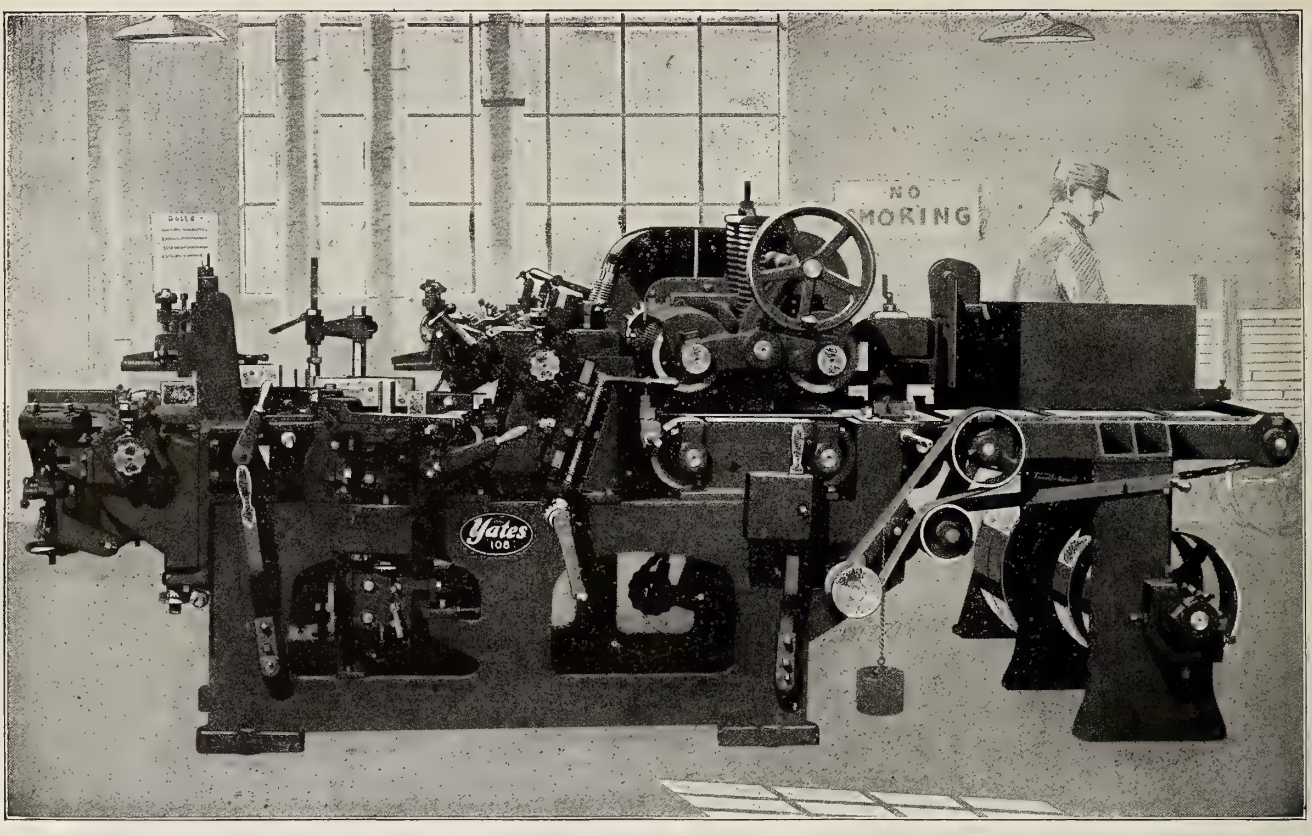
THE JOHN BERTRAM & SONS CO. LIMITED

DUNDAS, ONTARIO, CANADA

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No Need to Worry About Holding Labor

A Yates Number 108 Moulder will prevent it. It's a prod that hastens the gait of your production without increasing your pay-roll. Its easy adjustments and steady performance solve the migrating labor problem, because it makes the workman contented with his job.

THE Yates - formerly BERLIN NUMBER 108 MOULDER

is the machine that has prodded production in more than One Thousand Two Hundred plants in America and Canada. Its quick set-ups save production time—its fast feeds multiply output. Four to six times old sticker output is easily possible. Its grinding and jointing devices make best work easy to get and increase profits by bettering grades—often 40 to 60 per cent. When provided with hopper feed it "eats up" short stock as fast as one man can supply it. So strongly built that you can "speed 'er up" with safety to meet rush orders. Gives such universal satisfaction everywhere that it has been called "The Everpresent Moulder."

Detailed information free, without obligation. Ask for Circular 108.

P. B. Yates Machine Co. Ltd.

HAMILTON, ONT. CANADA

Successors to The Berlin Machine Works, Ltd. U.S. Plant, Beloit, Wis.

A Good Card Index
but couldn't understand
Human Nature

is the well-phrased statement of Lord Northcliffe, as being one of the important reasons why Germany's forty years of preparation have not brought her success in the Great War.

No more will technical excellence and modern equipment, by themselves, give a full measure of success in the industrial world.

The constant effort of every progressive executive is to increase the "man-power" of his organization, because his business instinct and experience tells him this is more important than any other one factor in his business.

The President of a prominent Canadian industry, making a product which stands among the best of its kind for quality, said to us recently: "I am, and have been, making fair profits, but I know I could make more. My men, although a large proportion are on piece work, do not seem to have the snap and interest in their work which I have observed in the . . . . . and the . . . . . factories." We told him that this was probably not entirely the fault of the workmen and a careful survey of the factory proved this to be the case, also that several different reasons existed for this condition.

Our recommendations, which he approved, and which were put into effect, brought about the desired improvement, without involving radical changes in his factory staff, or the purchase of new equipment. It also gave him the desired increase in production at lower cost, while making it possible for his employees to earn more.

Our work is entirely apart from the matter of petty criticisms or the installation of fixed systems. We know, just as you know, that a factory is a place to work in, not for ornaments. Also that a manufacturer cannot wisely put all his profits continually into new equipment; — but that real profits, which permit of cash dividends, come from effectively utilizing the working force and equipment NOW AVAILABLE.

The experience gained through ten years of this particular sort of work in more than 160 industries, whose working forces total more than 100,000 employees, is available for your particular problems. If you ask us whether we are experts in the best methods of "making steering wheels for motor cars" or some similar problem, we will probably tell you "No," even though the active members of our staff are all practical factory men. Brief reflection will tell you the matter of the broader but definite analysis of your business, based on our wide, general experience, and the outside viewpoint, is the way in which we can render you the most vital and the most profitable service.

The study of the best methods of wage compensation, the securing of continuous production, the utilization of your equipment so as to secure its operation at a minimum labor cost, are some of the matters to which we have given our attention in our service to many varied industries. These have ranged from logging camps in Florida and placer mines in the Yukon, to highly organized concerns like the Westinghouse Electric and the Standard Oil Company.

We do not expect you to be interested in engaging us, except for the purpose of promptly securing increased production from your present equipment and working force, or definite manufacturing economies, considerably in excess of the cost of our services.

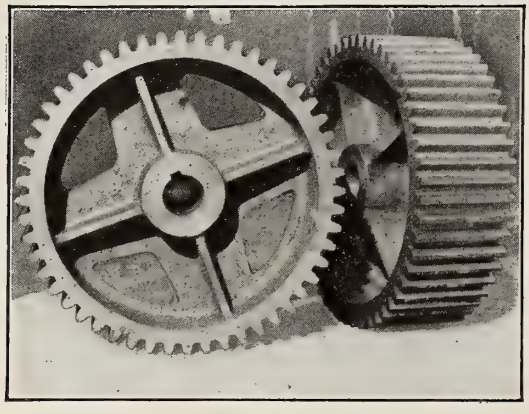
Correspondence, or a conference, concerning our service, with one of our senior partners, will involve no obligation or expense to you.

Chapin, Churchill & Company
INDUSTRIAL EFFICIENCY SERVICE
26-28 Lincoln Bldg., St. Catharines, Ont.

NEW YORK, N.Y. CLEVELAND, OHIO

CUT GEARS





Heavy Spur Gears for a
High Speed Drive

Note Our Shop Capacities

Spur Gears	up to	91 ins.	diam.
Bevel Gears	" "	62 ins.	"
Worm Gears	" "	108 ins.	"
Helical or Herringbone	" "	36 ins.	"
Racks	" "	10 ft.	length

Write for Quotations.

Hamilton Gear & Machine Co.

COR. CONCORD & VAN HORNE TORONTO



EVERY INCH OF

DU PONT FABRIKOID
REG. U. S. PAT. OFF.

THE IDEAL
LEATHER SUBSTITUTE IS
Uniform in Quality

WHY continue to use coated splits for covering furniture when you can obtain a Canadian-Made leather substitute of proven superiority?

SAVES ONE-THIRD OF COST OF COVERING MATERIAL

Compare the irregular side of leather with the even-edged, uniform quality CRAFTSMAN QUALITY FABRIKOID. The loss on leather due to irregularity and tender spots can be saved by adopting for upholstering furniture and vehicles the guaranteed CRAFTSMAN or MOTOR QUALITY grades of FABRIKOID.



STATE INTENDED USES AND ASK FOR SAMPLES OF THESE MADE-IN-CANADA PRODUCTS

Du Pont Fabrikoid Co.
TORONTO, ONT.

MADE-IN-CANADA

Toronto, Ontario

Mr. Manufacturer:—

Are you sincere in your desire to boost and make greater the British Empire by the buying of Canadian made goods? If so, look over the following list of high-grade oils, greases, compounds and paints manufactured in our oil refinery at Petrolia and our paint works at Toronto, Ontario. A postal card from you will bring you full information regarding the goods in which you are interested.

CYLINDER OIL
ENGINE OIL
MACHINE OIL
DYNAMO OIL
TANNER'S OIL
BLACK LEATHER OIL
PARAFFINE WAX
MINERAL SOAP STOCK
BENZINE



WHITE LEAD
READY MIXED PAINT
COLORS IN OIL
VARNISHES
BLACK JAPANS
STEEL BRIDGE PAINTS
ROOFING PAINTS
CUP GREASE
LINSEED OIL SOAP



Here is the Six of Sixes

No less a pace maker than the new Overland Four is the newest Overland Six.

It is the Six of Sixes! A snappy five passenger long stroke 40 horsepower model—easy to handle, light, economical, mighty comfortable, having all the advantages of higher priced Sixes, yet it comes *absolutely* complete at a lower price than any other Six of its size.

Its smart body design is long and low—having lines of artistic simplicity.

And the motor! This will warm the heart of every six cylinder enthusiast in the country.

You've heard all about fast getaways—smoothness—crawling and climbing on high. This Six does all that and then some!

The tires are four inch. It has the complete Auto-Lite electric starting and lighting equipment with all switches on the steering column.

The wheelbase is 116 inches. It has cantilever springs and even-flow vacuum system with the gas tank in rear.

❄ ❄ ❄

Some Six! Yet the price is lower than any other Six of its size.

But go to the nearest Overland dealer and see these new models. Go over them—note all the very real and important improvements.

The Overland dealer is ready to make demonstrations of both models now.

Catalogue on request. Address Department 783

The New Six
$1295

Model 85-6

35-40 horsepower en bloc motor
116-inch wheelbase
32 x 4 inch tires, non-skid rear
Cantilever rear springs
Auto-Lite starting and lighting
Vacuum tank fuel feed
Gasoline tank in rear with gauge
Electric control switches on steering column.

Price f. o. b. Toronto, Ont.

Willys-Overland, Limited
Head Office and Works, West Toronto, Ont.

National Motor Trucks

Well named! for they are recognized as the National Trucks of Canada. Although it is less than two years since the first National Truck was built, the dependable service of the first Trucks has brought unsolicited orders from Big Concerns who always buy to the best advantage. In competition with other makes, National Trucks have sold entirely on merit.

The National Truck is built to the specifications of the British War Office and is guaranteed ***for one year.*** Defective parts, if any, are replaced free of charge. This is only one feature of National Service that ***follows*** after the sale is made.

The National Catalogue is a compilation of Motor Truck facts. Send for a copy.

National Steel Car Company, Limited

Montreal Office :
SHAUGHNESSY BLDG.

Works and Operating Office :
HAMILTON, CANADA





New Prices August 1, 1916

The following prices for Ford cars will be effective on and after August 1st, 1916

Chassis	$450.00
Runabout	475.00
Touring Car	495.00
Coupelet	695.00
Town Car	780.00
Sedan	890.00

f.o.b. Ford, Ontario

These prices are positively guaranteed against any reduction before August 1st, 1917, but there is no guarantee against an advance in price at any time.

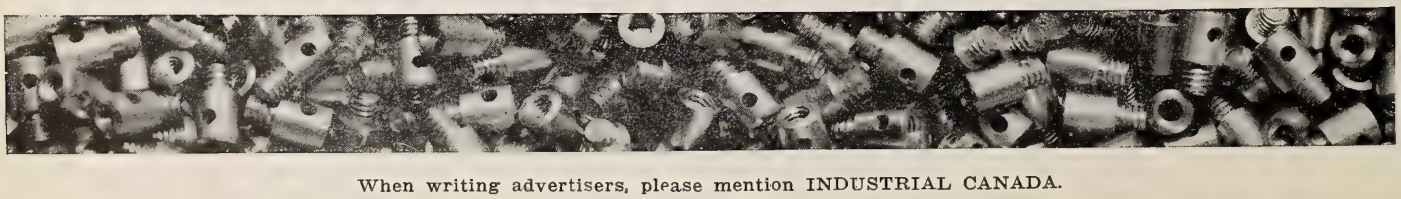
Ford Motor Company of Canada
Limited
Ford, Ontario

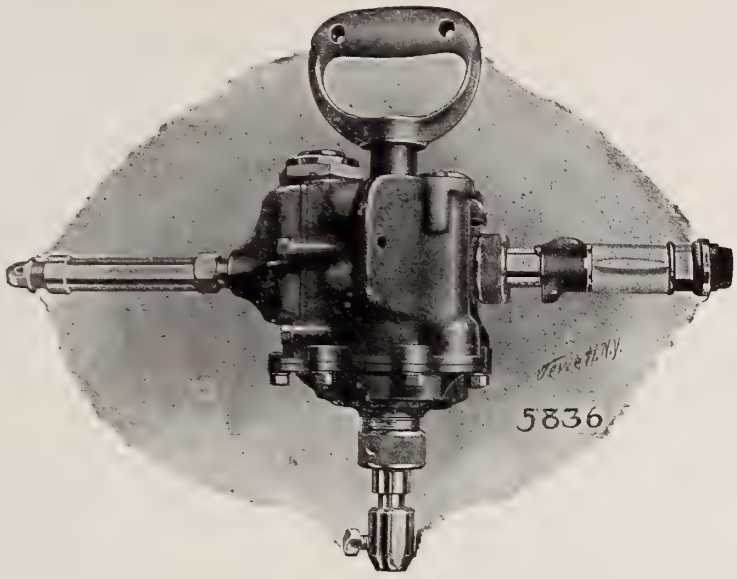


THE NATIONAL-ACME
Manufacturing Company

MAKERS of Special Screw Machine Products from bar stock. Also Standard Screws, Nuts, Studs and Hexagon Brass Nuts at

MONTREAL, P.Q.
De Courcelles & G.T.R., St. Henri





PERFORMANCE OF PNEUMATIC TOOLS

depends to a large extent on their design and the quality of material entering into their construction.

A careful comparison by the intending purchaser, of the merits of various makes, invariably leads to the purchase of

"LITTLE DAVID" PNEUMATIC TOOLS

Send for Bulletins covering:

Riveters	Hoists	Grinders
Drills	Chippers	Sand Rammers

CANADIAN INGERSOLL-RAND CO., Limited

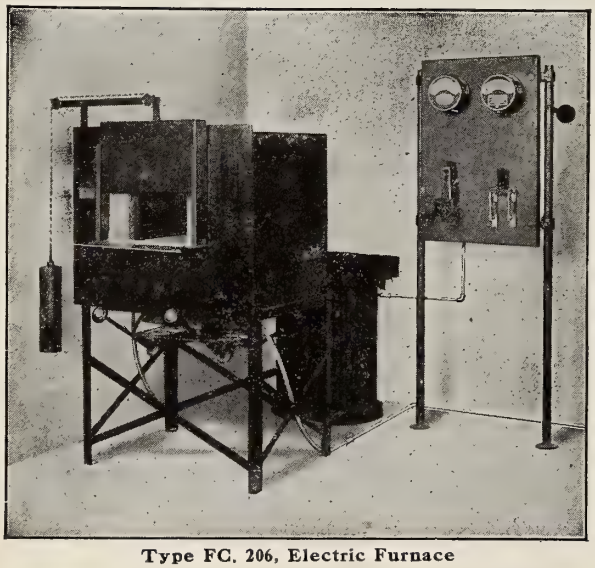
COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Works: SHERBROOKE, QUE.

Sydney Toronto Cobalt Timmins Winnipeg Nelson Vancouver

HOSKINS' ELECTRIC GAS OIL FURNACES

INSURE YOU GETTING THE MOST SERVICE FROM YOUR HEAT-TREATING DEPARTMENT



Type FC. 206, Electric Furnace

High-speed production, heavy duty machines, the high cost of steel and the big loss from shut-downs, demands the highest efficiency in heat-treatment. By using HOSKINS' FURNACES in your heat-treating plant you can obtain exact temperature control and absolute uniform heating, thus eliminating scaling, shrinking and warping of tools.

We are now in a position to install your complete heat-treating equipment. Our Engineering Department will study your heat-treating operation and suggest the most suitable furnaces to insure maximum production at minimum cost, whether electric, gas or oil. Write our nearest Sales Office.

CANADIAN HOSKINS LIMITED

ELECTRIC, GAS AND OIL FURNACES AND PYROMETERS

Sales Offices
MONTREAL and TORONTO
224 St. James St. Traders Bank Bldg.

General Office and Factory
WALKERVILLE, ONT.

NOW MADE IN CANADA "STELLITE" CONTAINS NO STEEL

The Metal Par Excellence for Cutting Steel and Cast Iron at High Speeds

The Advantage of the Stellite tool is twofold. First, it will do from 20 to 100 per cent. more work in a given time than a steel tool of the same dimensions, working under the same conditions. It takes bigger cuts at a higher speed than any tool steel; second, it does not require so much grinding, and thus utilizes the time of the operator at the machine instead of at the emery wheel.

The Reason the Stellite tool cuts so much faster than steel is because the Stellite tool is able to cut continuously at a much higher temperature than any steel tool; it will not burn, and the temper stays in the tool. Sometimes the speed of a lathe becomes so great that the edge of the Stellite tool will become visibly red, and remain so during an entire cut without the slightest injury.

Stellite is to the best high-speed steel what high-speed steel is to ordinary steel.
Costs more at the beginning, but is by far the cheapest and most profitable in the end.

MADE IN CANADA BY

Deloro Mining & Reduction Co., Limited

DELORO, ONTARIO — C.P.R. BUILDING, TORONTO, ONTARIO

Sold exclusively in Canada and Newfoundland by **THE CANADIAN B. K. MORTON COMPANY, LIMITED**

49 Common Street, MONTREAL, P.Q. — 86 Richmond St. East, TORONTO, ONT. — Full particulars and price on request.

Brass Castings

Also Bronze, Copper and Aluminum

GOOD DELIVERIES
REASONABLE PRICES

Send Samples or Blue Prints to

KINZINGER BRUCE & CO.
LIMITED
NIAGARA FALLS, ONT.

Brass, Phosphor Bronze, Copper and Aluminum Castings

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

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Tallman's Reputation is in the Goods

Tallman Brass & Metal Co.
HAMILTON, ONT.

MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ∴ ONTARIO

DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited
Welland, Ontario

STEEL CASTINGS

From MALLEABLE STEEL, MANGANESE STEEL, CROME STEEL, Etc.

STEEL PROPELLER WHEELS
TURBINE WATER WHEELS, MILL GEARING, Etc.

THE WILLIAM KENNEDY & SONS, LIMITED
OWEN SOUND - - ONT.



MADE IN CANADA

Canadian Hart Wheels

CUT FASTER LAST LONGER
Than any other wheels on the market

Tell us the service you want performed and we will supply you with an abraser that will save you time, money and worry.

Send for one of our catalogues and tell us your troubles. We do the rest. :: :: :: ::

CANADIAN HART WHEELS LIMITED
450 BARTON ST. EAST
Hamilton :: :: :: Ontario

The Canada Metal Co., Limited

Manufacture in Canada

Our Babbitt Metals Give Excellent Service

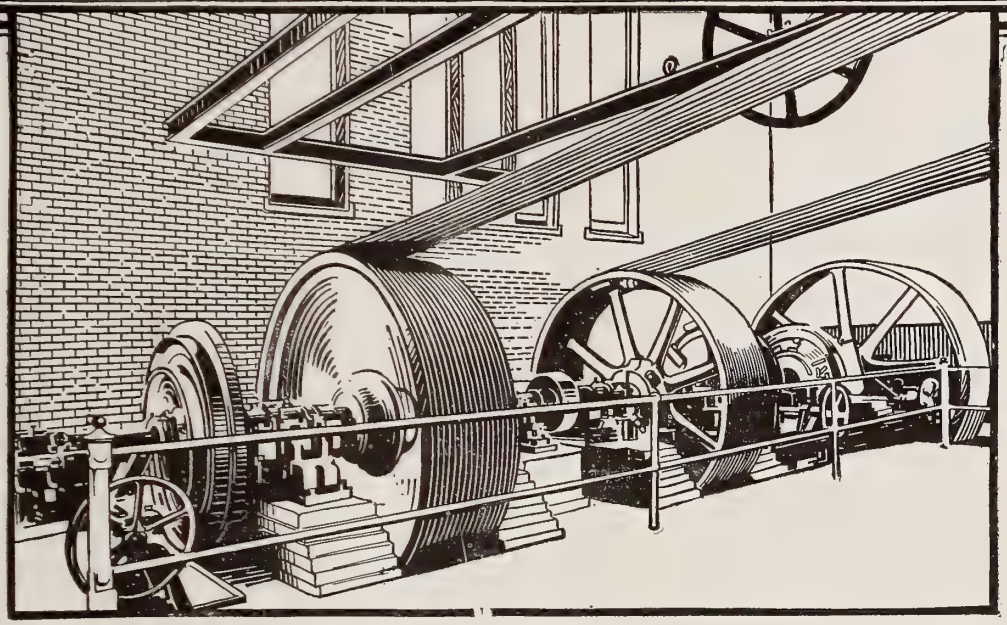


We are Proud of the Goods We Manufacture

FOR GENERAL MACHINERY BEARINGS
TRY
Harris Heavy Pressure
THE BABBITT METAL WITHOUT A FAULT
WE HAVE EVERYTHING IN METALS
Ask for Our New Catalogue. Mailed FREE on Request

THE CANADA METAL CO., LIMITED
Head Office and Factory, Toronto Branch Factories, Montreal, Winnipeg

Dodge Rope Drive



WHILE the Rope Drive was never intended to replace the Belt Drive indiscriminately, it has its own distinct field and the experienced engineer fully recognizes this.

The principal advantages of transmitting power by means of a Rope Drive are: convenience in many forms of transmitting power, economy in cost and maintenance, ease and simplicity of distributing power giving a positive drive, smooth-running and noiseless.

For heavy drives where the centres are excessive, or unusually close, or for drives at an angle, or from one building to another, and where a specially positive drive is desired, there is no substitute for the Dodge Rope Drive.

We design—manufacture—and install—Rope Drives for Pulp Mills, Paper Mills, Saw Mills, Textile Mills, Grain Elevators, Rolling Mills, etc.

DODGE
ROPE DRIVE

Our 30 years' experience in Rope Drive Engineering is available to large power users. Send for information blank. We are Rope Drive Experts. 16

SOLE MAKERS

Dodge Manufacturing Company, Limited

TORONTO - ONT.

Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

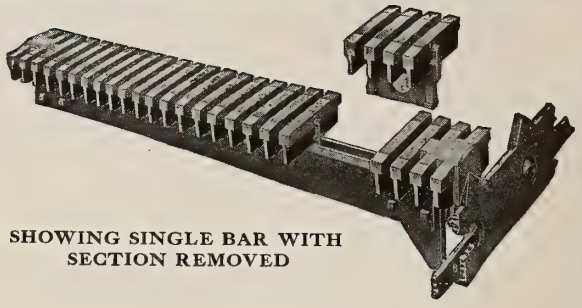
Galt Foundry Co.,
Galt, Ont.

Gentlemen :—

Some months ago we ordered one set of McNaughton Rocking Grates for our No. 1 Boiler. We have been using this continually ever since, and they gave us such good satisfaction, that we followed up the order with two more sets for our No. 2 and No. 3 boilers. We may also add that these are giving entire satisfaction and showing a clean fire at all times.

Yours truly,
(Signature).....

Name of above company on request.



SHOWING SINGLE BAR WITH SECTION REMOVED

A GRATE BAR

that gives universal satisfaction. It is in use in more than one hundred of the biggest plants in Canada.

The McNaughton Rocking Sectional Grate Bar

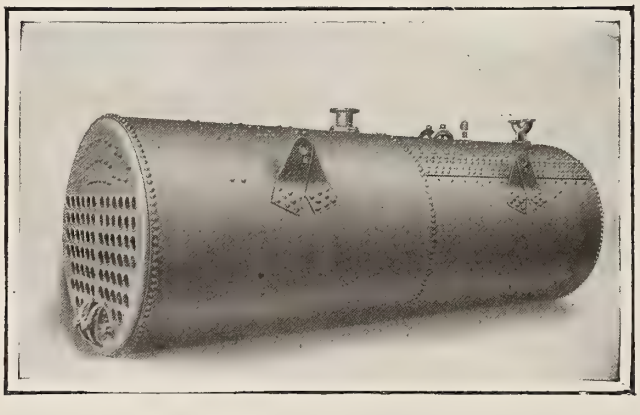
has high efficiency, long life and low repair costs.

Write for Descriptive Leaflet

GALT FOUNDRY CO. - - Galt, Ontario

E. Leonard & Sons, Limited

LONDON - ONTARIO



Manufacturers of

BOILERS
ENGINES

of all types and sizes.

BRANCHES AT

1790 St. James Street, Montreal, P.Q.
Box 1315, Calgary, Alta.
62 Water Street, St. John, N.B.
567 Banning Street, Winnipeg, Man.
Vancouver Machinery Depot, Vancouver, B.C.



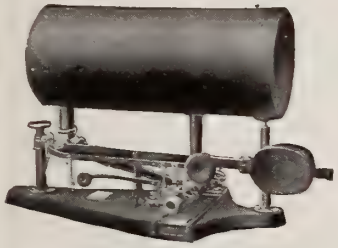
This Pound of Coal

is Capable of Sustaining a Horse-power for nearly an Hour.

EVERY pound of coal contains a definite amount of potential energy—combustion liberates it in the form of heat energy—eventually, mechanical motion.

Even in passenger locomotive service (notoriously wasteful in energy transmission) a pound of coal will develop a horse-power for 20 or 25 minutes. With this in mind imagine an installation of the

Morehead
Back to Boiler
SYSTEM



saving, daily, from 2,000 to 30,000 pounds of coal—paying for itself in a few months' time.

This is the experience of hundreds of engineers using steam for heating, drying or cooking purposes.

The Morehead System keeps steam-heated equipment absolutely free of condensation—returning **under pressure** the chemically pure hot condensation to the boilers as feed water.

Ask for particulars applying to your individual requirements. Our experts will be glad to work with you on any job you have which involves the use of steam in any way.

Canadian Morehead Manufacturing Co.
Woodstock Dept. "K" Ontario

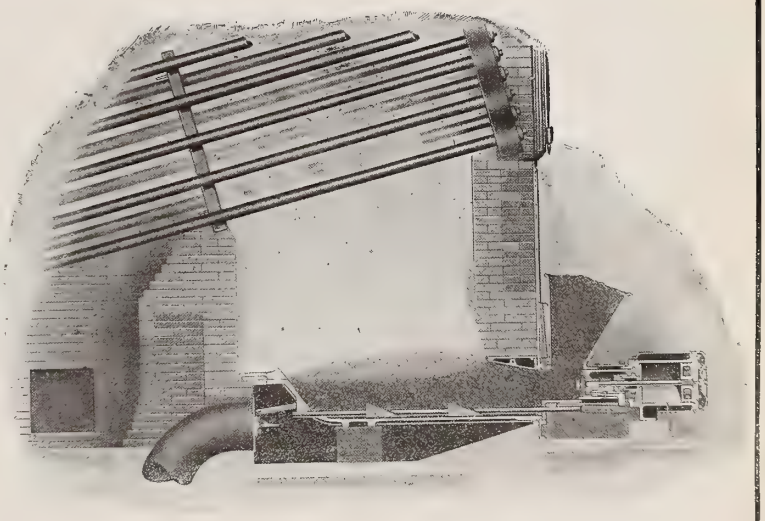
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Do Your Profits go up the Chimney?

A proper stoker will save you 15% to 25% of your fuel bill.

Many of the leading factories in Canada are using Jones Underfeed Stokers with excellent results.

Let us demonstrate to YOU the saving to YOU of an installation.



Jones Underfeed Stoker

MADE-IN-CANADA

A simple stoker which utilizes the maximum heat value in your fuel.

Let us send you a booklet.

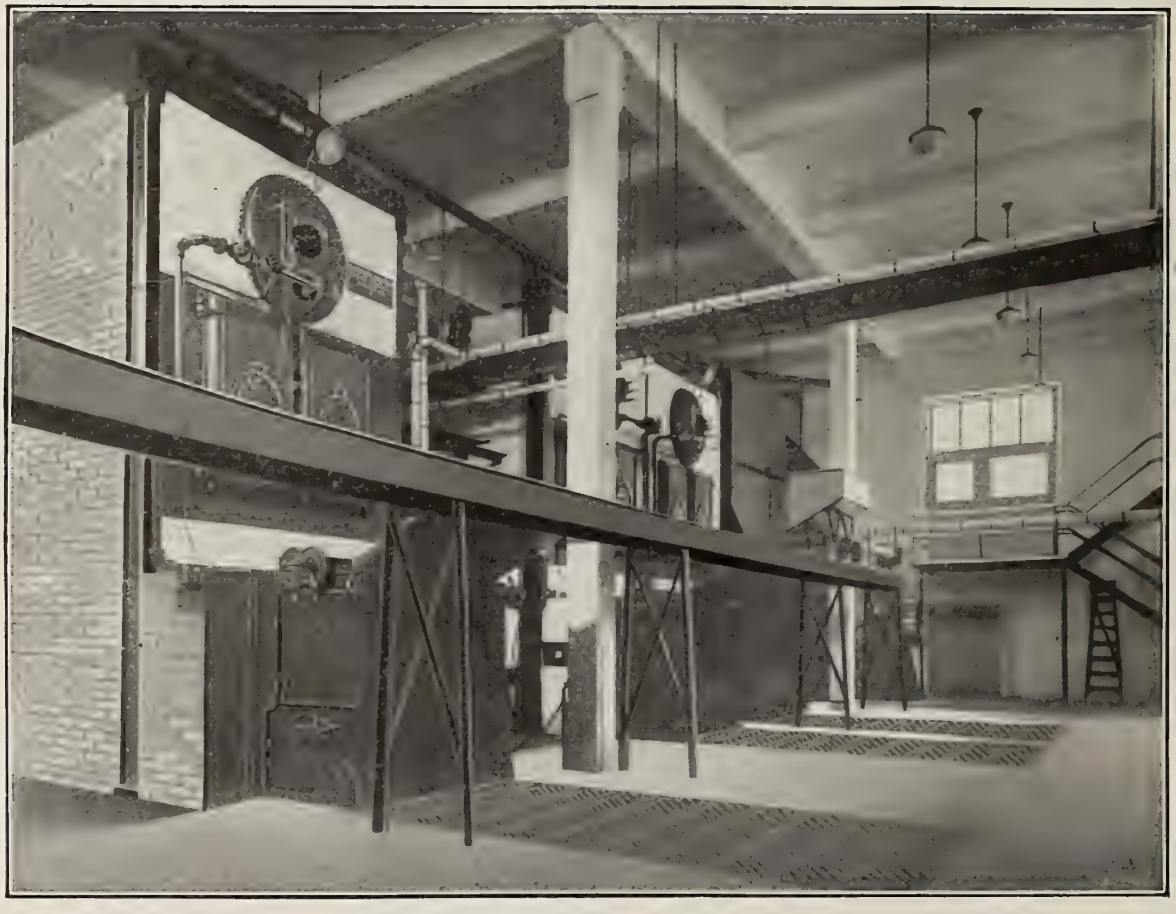
JONES UNDERFEED STOKER COMPANY, Ltd.

NATIONAL TRUST BUILDING, TORONTO

POWER EQUIPMENT

Steam Engines and Turbines, Return Tubular and Water Tube Boilers, Heaters, Pumps and Condensers

Built and Designed by Experts with Quality as the First Consideration



Illustrating the Attractive Boiler Room at the B.C. Parliament Buildings, Victoria, B.C., equipped with 3 G. & McC. Water Tube Boilers

The construction of G. & McC. Co. Boilers meets the increasing demand for the highest quality and efficiency

Every Part Subjected to Steam Pressure is MADE OF FORGED STEEL

They Excel in Positive and Rapid Circulation and in Increased Steaming Capacity

Catalogs, Plans and Specifications will be sent upon request

THE GOLDIE & McCULLOUGH CO., LIMITED

Head Office and Works: GALT, ONTARIO, CANADA

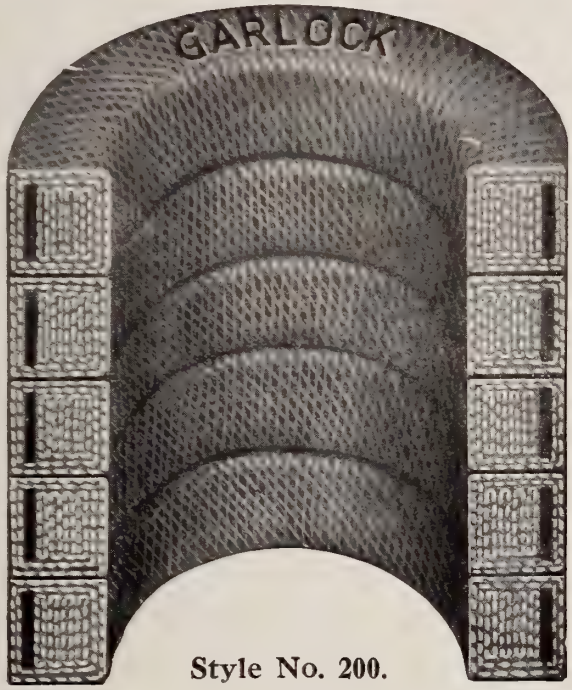
TORONTO OFFICE: Suite 1101-2 Traders Bank Bldg.

WESTERN BRANCH: 248 McDermott Ave. Winnipeg, Man.

QUEBEC AGENTS: Ross & Greig 412 St. James St., Montreal, Que.

BRITISH COLUMBIA AGENTS: Robt. Hamilton & Co. Vancouver, B.C.

Garlock High Pressure Piston Rod Packing



Style No. 200.

Is built up on a core consisting of several flattened tubes.

The tubes are braided from the highest grade of asbestos yarn, and are cemented together with the best rubber friction.

The tubes are cemented only on the outside, therefore the packing is lighter per linear foot than other types of high pressure packing.

In service the tubes open under pressure and expand the packing against the piston rod.

The core of flattened tubes is backed with a cushion of high-grade rubber, so compounded as to retain its resiliency under heat.

The tube-core and rubber cushion are covered with cloth woven from the highest grade of long fibre asbestos.

Our high pressure packing is not merely smeared on the outside with graphite and grease.

Every fibre of it is saturated with a specially prepared lubricant, which does not affect the rubber cushion or friction.

The outside of the packing is coated with the best grade of floating stock graphite.

The best materials we can buy are used in the manufacture of our high pressure packing.

It is built up in rectangular form and uniform shape, and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

Our high pressure packing is made by experts who have done nothing else for years but make that one type of packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

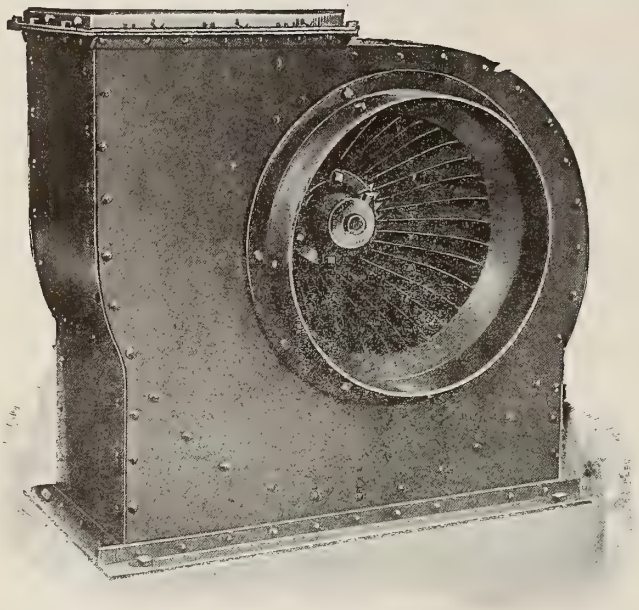
The Garlock Packing Company, Hamilton, Ontario



Branches :

Montreal, Quebec ..... 342 St. James St.
Toronto, Ontario ..... Continental Life Bldg.
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Keith Fans

For Heating and Ventilating

When it comes to a question of Heating and Ventilating the Factory, Church, School or Public Building, it is imperative that you should select the best and most approved system. The **"Keith" Fan** is specially distinguished for giving greater volume with less power than any other Fan made. Get our Keith Fan Catalogue No. 55 and judge for yourself.

SHELDONS LIMITED - GALT, ONTARIO

Toronto Office—911 KENT BUILDING

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Messrs. WALKER'S, LIMITED, 259-261 Stanley Street, Winnipeg, Man.
Messrs. GORMAN, CLANCEY & GRINDLEY, LIMITED, Calgary and Edmonton, Alta.
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YOU CAN INCREASE YOUR POWER WITHOUT INCREASING THE SIZE OF YOUR POWER PLANT

Your present line shafting is consuming from 15% to 60% of your power.

The Chapman Double Ball Bearing will save this waste and turn it into productive energy.

They will also reduce your oiling and attention to a minimum.

They fit any adjustable hanger and the change can be made with but little delay to you.



In use in over 2,000 Canadian Factories

The Chapman Double Ball Bearing Company

OF CANADA LIMITED

339-351 Sorauren Avenue ∴ ∴ Toronto, Canada

WATEROUS BOILERS

For Every-day Service



These boilers are exceptionally well constructed to stand up to the severe service expected of them.

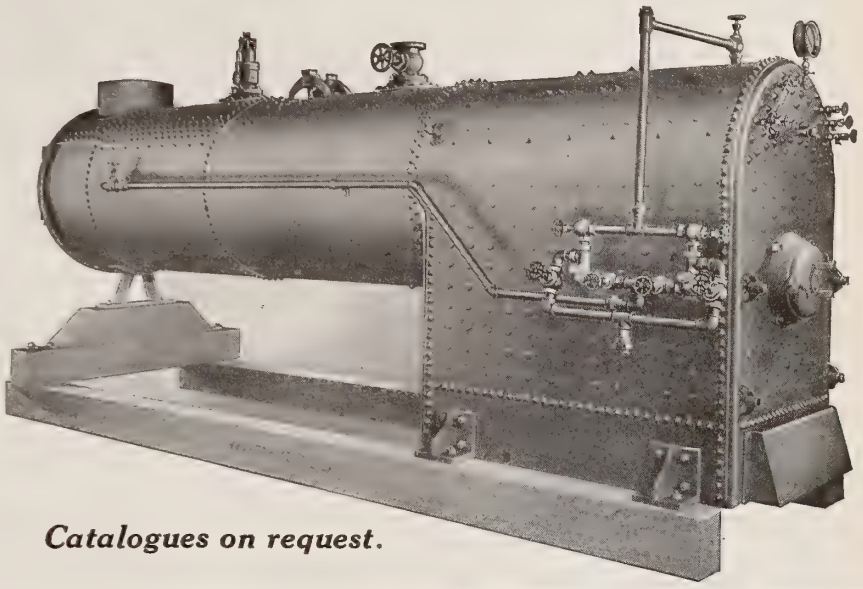
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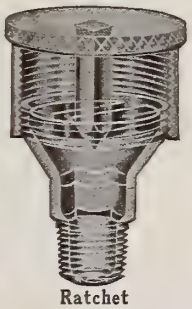
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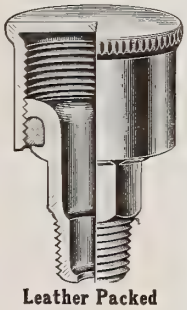
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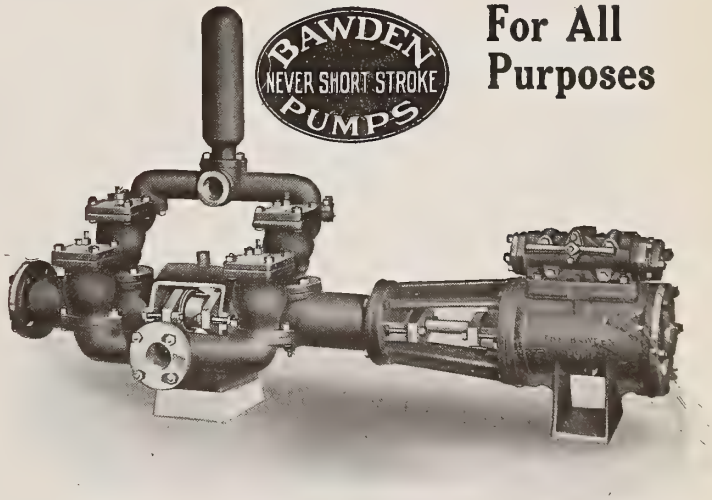
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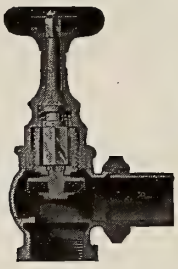
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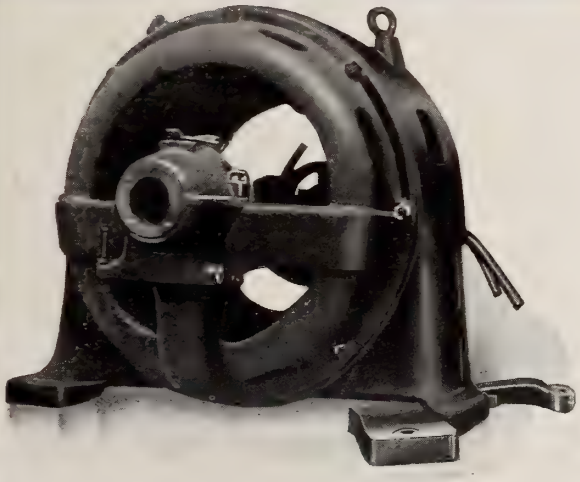
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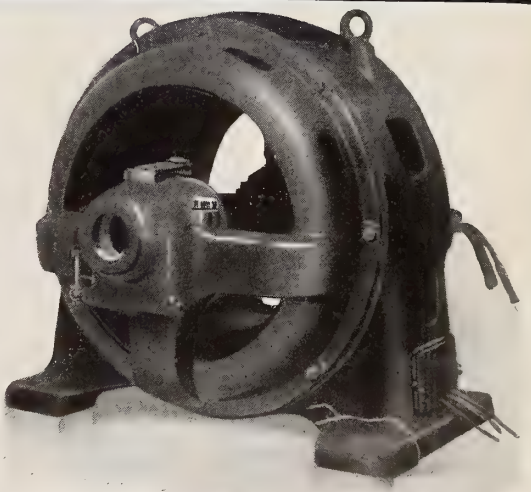
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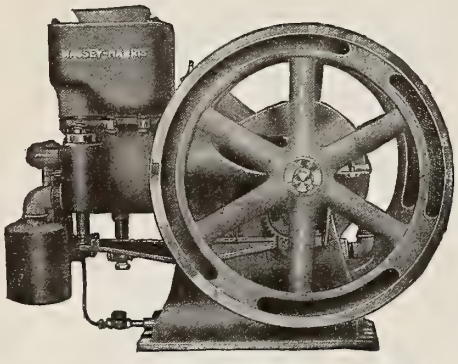
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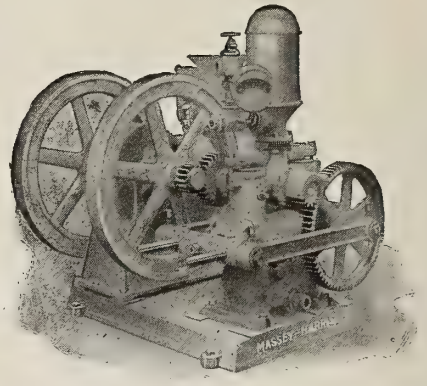
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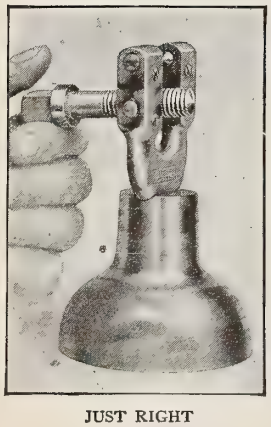
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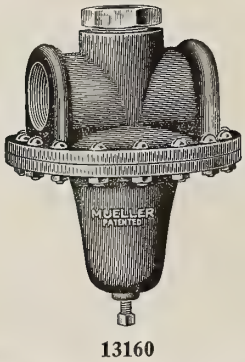
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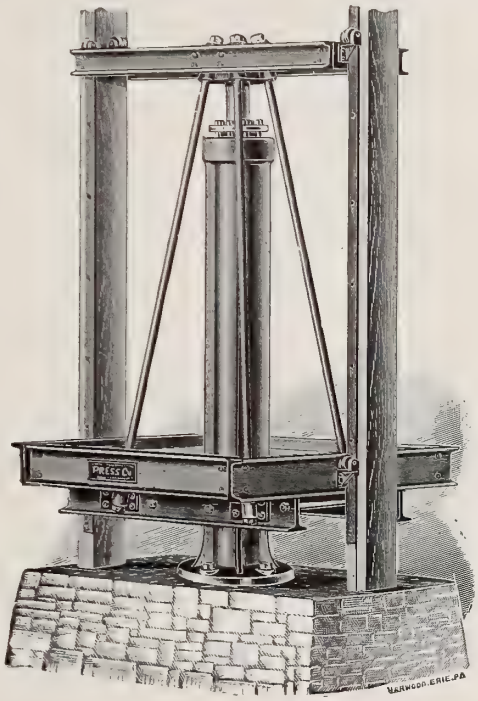
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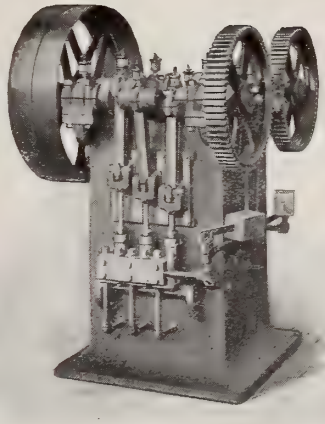
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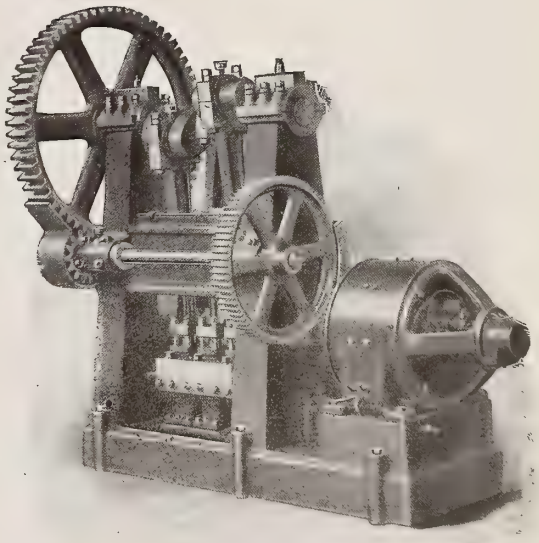


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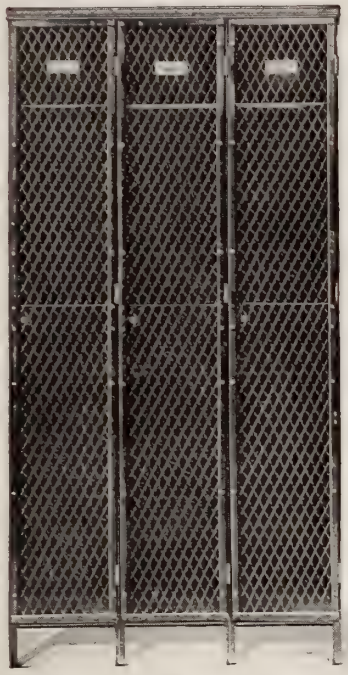
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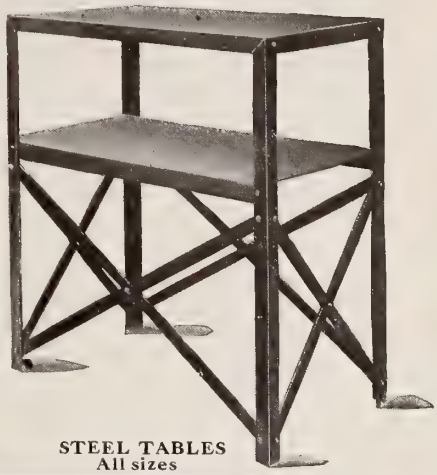
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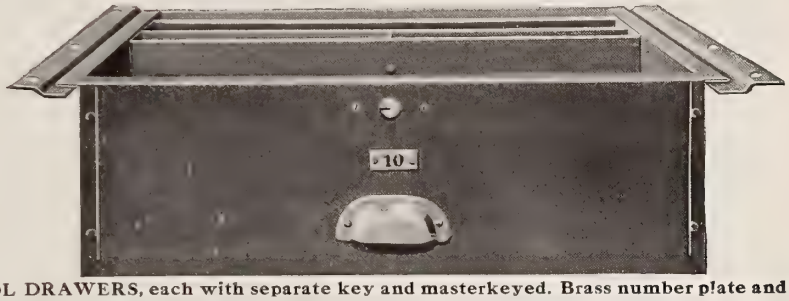
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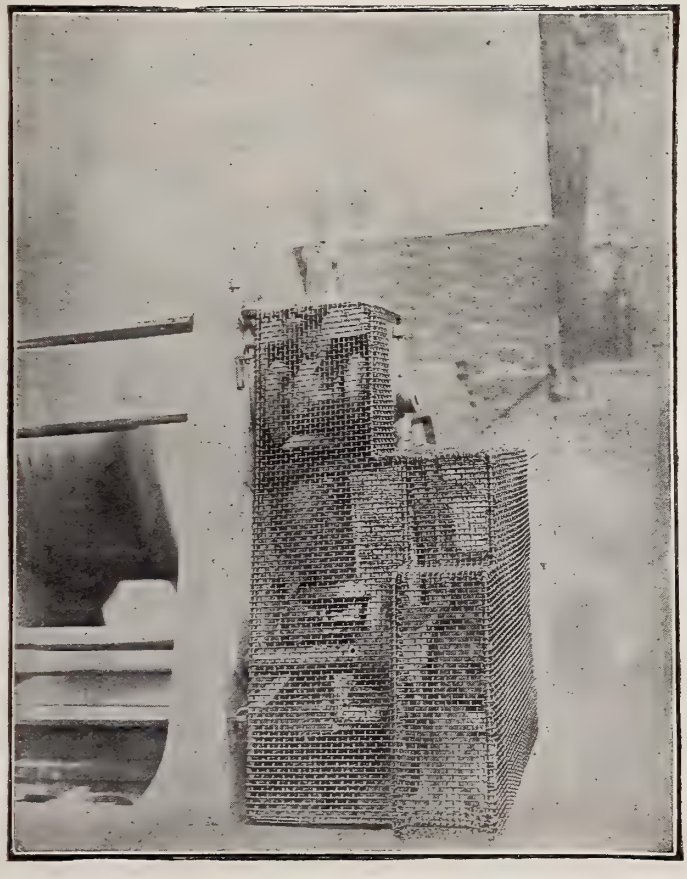


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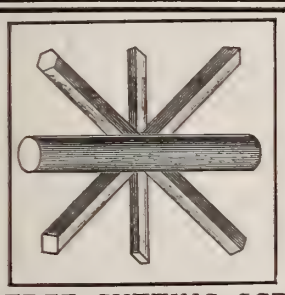
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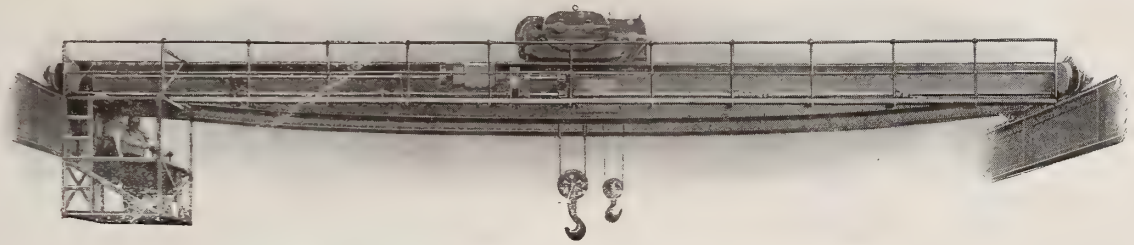
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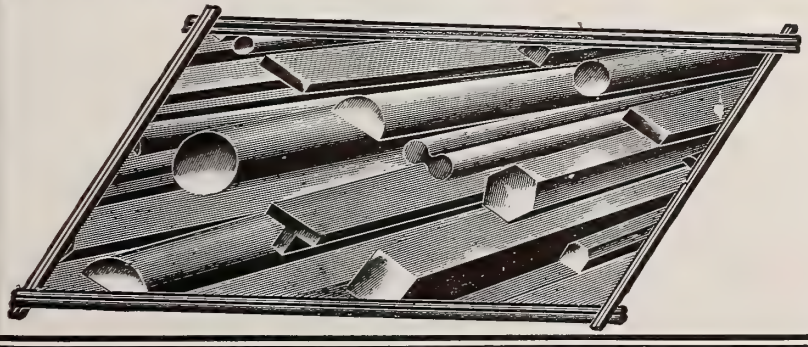
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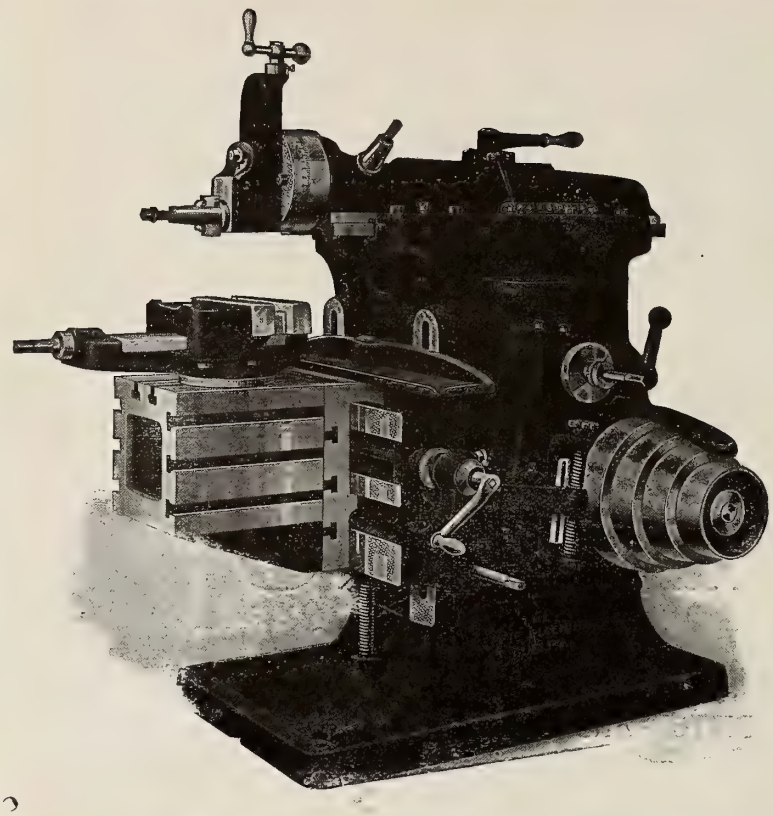
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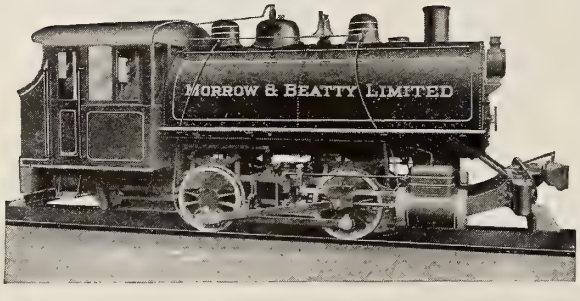
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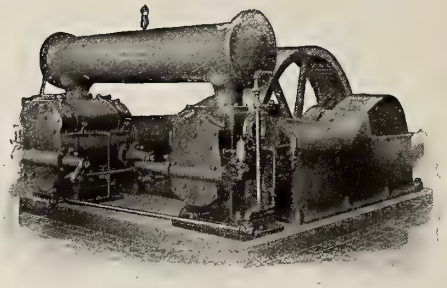
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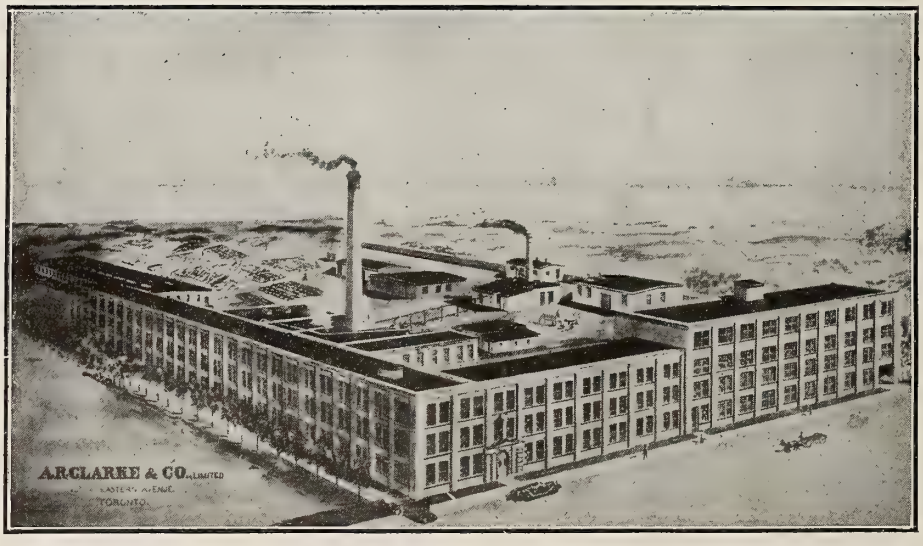
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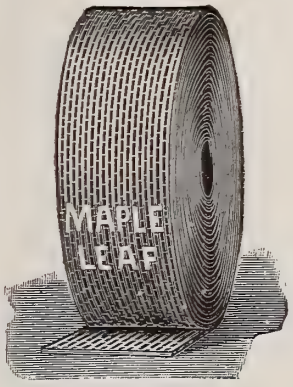
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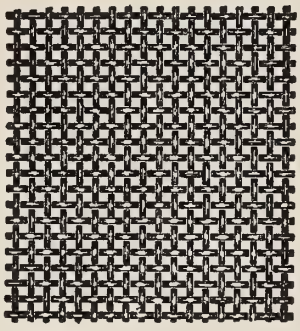
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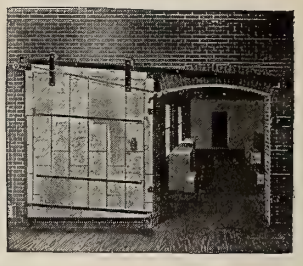
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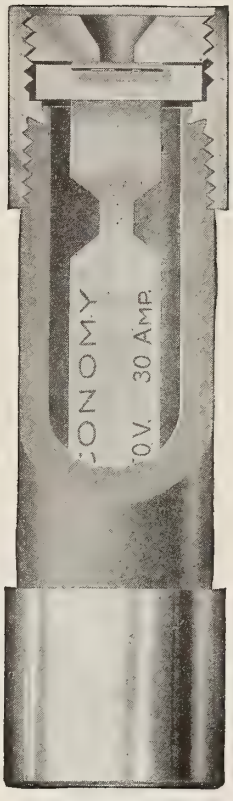
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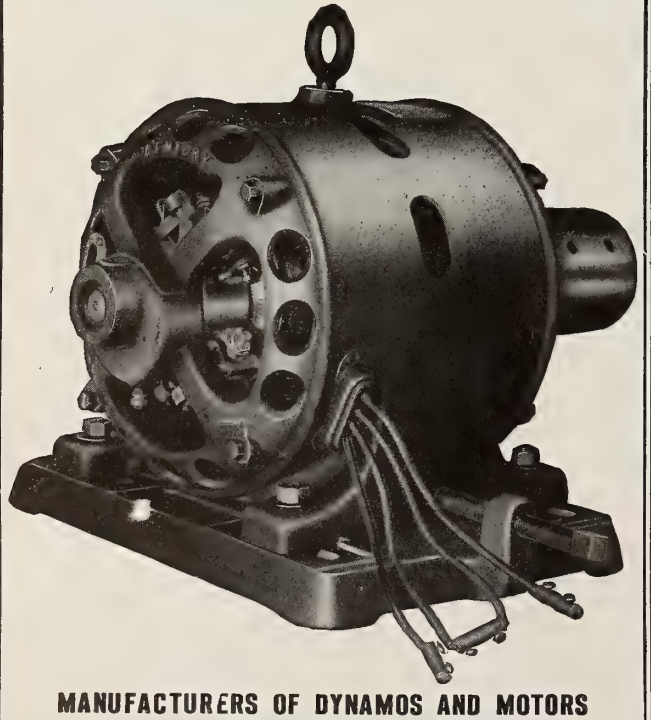
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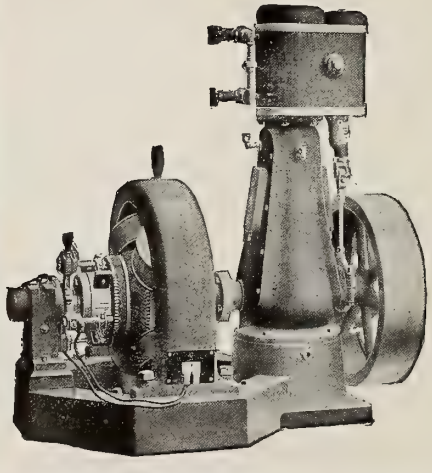


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Place your lighting installation on a scientific basis with a correctly arranged system of

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This viewpoint has been justified in many cases where the automobiles came along and wore out the macadam roads almost as soon as they were built.

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INDUSTRIAL CANADA

ISSUED BY

The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

Vol. XVII. TORONTO, AUGUST, 1916 No. 4

INDUSTRIAL CANADA

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Importance of the 99 Per Cent. Drawback.

REFERENCE has frequently been made in the section of INDUSTRIAL CANADA devoted to the consideration of tariff matters, to the privilege accorded manufacturers of securing a drawback or refund of customs duties on materials used in manufacturing for export. Briefly stated, a drawback is obtainable of 99 per cent. of all customs duties, whether regular duty, dumping duty, or war tariff duty, when paid on imported articles which are advanced in manufacture in Canada and exported. The effect of the export drawback provision, as nearly as possible, is duty free materials for manufacturing for export.

The Government of Canada does not lose any revenue by the drawback provisions, for manufacturers could not import the articles to be used in manufactures for export if they had no relief from customs revenue duties thereon. Without the privilege of drawback the payment of customs duties on imported articles to be manufactured and exported would make the manufactured article cost too much to permit of successful export trade in competition with the manufacturers of other countries.

In the United Kingdom, and other countries, which have developed great exports of manufactures, either a similar drawback policy is pursued, or arrangements are sanctioned whereby manufacturers can manufacture in bond with duty free materials, and their products may afterwards be entered ex-bond for export without payment of duties.

The policy is especially necessary to the upbuilding of any young country. The domestic demand in respect to a given project may not be large enough to warrant investment in a factory for its manufacture, but such an investment may become attractive, and economically satisfactory, when the possibilities of the export trade, added to the domestic market, are considered.

Again, numerous articles made in Canada are substantially the product of articles of domestic origin, but to complete them, or to bring the finish to the desired pitch of perfection, some articles of foreign manufacture are necessary. The duty upon the imported articles incorporated into such a product represents a sum which renders it impossible for the Canadian manufacturers to compete in the export trade, but the drawback clause corrects the difficulty, enabling industries to be established which otherwise could not be established here. In numerous other industries it permits of the enlargement of output and a lowering of the cost of production through creating a greater spread for overhead costs; and it promotes steady, continuous employment of skilled labor. Without the drawback provision, numerous industries would not have been established and others would not have been enlarged. Payment of duty, moreover, on imported articles to be advanced in manufacture in Canada and exported, would not occur. Therefore the Government of Canada does not lose any revenue by the drawback provisions.

Under preferential tariffs, favoring Canadian products in other countries, it is certain that numerous Canadian manufactures, not heretofore sold abroad in a large way, will find profitable export markets. The manufacturer who is investigating these possibilities and who desires full information as to the customs drawback provision can obtain the same from the Tariff Department of the Canadian Manufacturers Association.

Lack of Statistical Information.

THE inadequacy of the published returns on the commerce of the country has long been matter of comment. Manufacturers desiring information on the importation or exportation of this or that article are as a rule unable to get the desired figures without serious delay. In some cases the figures are given in the blue books, but in the majority of instances they are found in combination with those of other articles of a similar class. Greater differentiation is obviously necessary if the published returns are to be of immediate service.

Up to the present time the need for this more detailed service has not been so keenly felt as it will be in the course of a year or two, when the threatened world war of commerce begins. Canada will have to make a big effort to maintain and strengthen her industrial position early in that struggle, and it will be the duty of the government to facilitate and encourage development by placing the best possible information at the hands of the manufacturers. Comparative figures, not for groups of commodities, but for individual commodities, will be needed, and the sooner the statisticians at Ottawa begin to divide up their figures the better. By and by, when Canada becomes a nation of twenty-five millions, the value of works of this kind, started to-day, will be fully appreciated.

Scatter Your Catalogues.

IT is said that the old biblical injunction to scatter one's bread upon the waters arose from the custom of the Egyptians of sowing seed on the surface of the Nile when it was in flood. The seed sank through the water, lodged in the rich sediment on the bottom, and later, when the flood subsided, took root and grew. The procedure, to one unaccquainted with the probable result, must have seemed a strange and useless one, but, as the Bible goes on to say, it bore fruit later on.

The sending of catalogues here, there and everywhere, may appear to many people to be an equally fruitless undertaking. Yet we are firmly of the belief that in the widespread dissemination of these heralds of commerce much effective work may be done. Scatter them abroad. Send them where it may appear to be quite senseless to address them; and some day, somehow, there will follow results.

These words of counsel have been suggested in some measure by reading a paragraph from a recent report of W. T. Wickham, late H. M. Trade Commissioner in New Zealand. Mr. Wickham appealed to manufacturers to send him their catalogues for reference purposes. These he promised to file in his office and to use with discretion. The response to his appeal was most disappointing. Not one-third of the manufacturers doing direct trade with the Dominion sent him their publications.

In some few cases, doubtless, satisfactory reasons could have been given for the failure to comply with this simple little request. Possibly some manufacturers feared that they might thereby give information to competitors. Others might already have had sufficiently satisfactory connections. But over and above all this, there was an obvious lack of interest, not to speak of enterprise, which is most distressing to those who are laboring for trade expansion between the different parts of the Empire. Surely the despatch of a catalogue is a very simple matter. Why should manufacturers be so unconcerned about the possible expansion of their business as to neglect doing it?

Preparing for the National Commerce Convention.

IN our July issue we took occasion to commend favorably the action of the Rt. Hon. Sir George Foster, Minister of Trade and Commerce, in issuing a "Call to Action" and intimating that he would summon the business interests of the country to meet in convention in October to discuss plans for developing Canadian business in the critical period following the war. This step of the Minister has met with general approval and seems to be the logical course for the government to persue.

It is now interesting to learn that Sir George has not been content merely to point the need for action and afford opportunity for consultation. He has gone further and has had prepared an outline plan of preparation for the coming convention. This plan is naturally of a tentative nature and purely suggestive. It calls for the formation of a certain number of committees to study different phases of the situation and presents a questionaire, which is to be placed in the hands of these committees, boards of trade, municipal officers, etc.

It is sincerely to be hoped that some practical use will be made of the suggested plan, which is at best but dry bones unless some life is infused into it. There is ample material here for building up a splendid foundation for the convention. Unfortunately time is short and something should be done at once to start action along the proposed lines.

The Northern Ontario Disaster.

A BULLETIN, issued with commendable despatch by the Canadian Forestry Association immediately after the occurrence of the terrible forest fires in New Ontario, lays the blame for the catastrophe on the laxity of the protection system in force in the province of Ontario. Asserting confidently that the fires originated in the land-clearing operations of the settlers, the bulletin goes on to say that Ontario ought to be provided with a law similar to laws in force in Quebec, British Columbia and Nova Scotia, which give the authorities a large measure of control over the use by settlers of fire in clearing their land. "The laws of Quebec, British Columbia and Nova Scotia place heavy penalties of fine or imprisonment upon any

settler who starts a fire during the season of danger, April to November 15, without a written permit from a qualified forest ranger," states the bulletin. "The object of these laws is to make sure that the settler does not select a windy or abnormally dry day on which to carry on his fire operations, also that he piles his brush in the centre of his clearing, where the risk of contact with neighboring timber is at a minimum. This places no unreasonable hardship on the settler and, on the other hand, is a necessary guarantee for the safety of lives and immensely valuable timber in his neighborhood. During periods of excessive and dangerous drought, the British Columbia and Quebec forest authorities have power to place a strict prohibition upon the setting out of all fires in forest areas for whatever period of time may be considered necessary.

"What is the situation in Ontario? There is neither law nor regulation to prevent a settler letting loose conflagrations in any way and at any time he may select. No ranger has authority to advise or interfere with a settler in the employment of fire.

"Under a watchful and modern forest administration, the whole period of abnormal drought *would have found every settler under a prohibition to set out fires of any sort.* There was no such prohibition. Settlers' fires were started at the height of the danger season. Hundreds of lives, entire towns, and incalculable amount of growing crops and timber growth have been swept away and the whole Clay belt seriously set back is its development."

Ontario has been accustomed to pride itself on its administration of affairs in the northern section of the province, but it looks as if it had been woefully lacking in foresight in the matter of forest protection. The Forestry Association demands thorough remodelling of the ranger service; the employment of a larger number of inspectors or supervisors; and the establishment of control over the burning operations of settlers. The cost of the improved service would be completely compensated for by the great saving, not only of forests but of human life as well. Immediate action is needed and it is to be hoped the provincial government will take it.

Again We Say, Wake Up!

IN a letter recently received from a manufacturers' representative in Cape Town, South Africa, who has been advertising for Canadian agencies for the South African territory, complaint is made that Canadian manufacturers are not alive to their opportunities. He has been inviting them to write to him and get in touch with the market down there, but in spite of the earnestness of his invitation he has had no response whatever.

On the other hand, this gentleman states that each mail brings him offers of agencies from the United States, showing how keenly alive American manufacturers are to the importance of cultivating South African trade. He doesn't want these agencies. He prefers to assist in developing inter-empire trade, but, if Canadians won't come to him, what then?

It is surely rather ironical that the invited guests should spurn the offer, while the uninvited guests are clamoring for admission. But after all, it is an old story. Ever since INDUSTRIAL CANADA started publication, there have been complaints that the Canadians have been slow to bestir themselves. The war might have been expected to wake up the tardy ones but it does not seem to have had that effect even yet.

The Coming Test.

THE Toronto Branch of the Canadian Manufacturers' Association had a visit recently from a representative Australian manufacturer, Mr. Octavius C. Beale, Ex-President of The Associated Chambers of Manufacturers, Australia, who was on his way to England to urge the formation of a British manufacturers' association as the centre of an Empire federation of manufacturers' associations. The ultimate object is to prepare and frame a joint policy which will focus and regulate commercial relations between Great Britain, her Dominions and her Allies, in order that home industries and production of the soil may be developed and the Empire made more self-supporting.

Leaders of industry are now realizing that the war, stupendous as it may seem, is only one of the transient episodes of a conflict certain to last for many years, and to test every efficient quality that the Allies possess. When peace has been established—on whatever basis—the enemy will simply retransfer the venue to the economic and political domains and carry on the struggle with greater vigor than before. The idea that victory in arms will enable us to revert to our cherished narrow interests and our easy-going dilettanteism is a delusion. We shall still be locked in a deadly embrace with a compact people of 120,000,000, endowed with great resources, unquenchable faith and a single aim.

What the Entente Powers must attend to in framing the conditions of peace is that they shall secure all possible advantages in the new phase of the struggle against an enemy who has all too many points in his favor. The enemy's strongest weapons in peace, as in war, are not his lack of moral scruple, but his enterprise, his stoicism, and his unceasing application of the law of cause and effect. The Germans understand, as the Allies do not, the part which combination of resources and complete organization of co-operative effort must play in the modern world. These factors are at the root of their success in foreign trade, and their further success, in undermining the economic life of countries like Great Britain, France, Russia, and Italy, can be averted only by a genuine league of commercial interests reaching far deeper than mere customs arrangement.



NEW SHIPYARD AT NORTH VANCOUVER, B.C.
View of Wallace's No. 2 Shipyard, showing the "Mabel L. Brown" under construction and the keels of two more of the vessels laid. *—Copyright Photograph.*

SHIPBUILDING IN BRITISH COLUMBIA

By J. H. HAMILTON

CONDITIONS arising from the war, causing a great shortage of ships available for any purpose not directly connected with the transport of troops, munitions and supplies, were felt as keenly in British Columbia as in any part of the world. Orders were available for her products in overseas markets, but could not be accepted owing to the absence of tonnage. The lumber trade, in particular, suffered, as British Columbia export mills were able to charter very few ships, and those only at a rate higher than had been paid by mills in the United States, for the reason that the majority of the lumber carriers are American-owned and naturally preference was shown to the business of American mills.

The position became so irksome that the matter of finding some way out became a foremost subject of business policy of the public bodies of the Province. The Provincial Government took the question in hand and appointed a Commission to enquire into the problem and to secure information from the best available sources as to the advisability and practicability of legislation in aid of the establishment of a shipbuilding industry on the coast.

As an outcome of the information thus secured, the Government brought in a Bill at their recent session in May, providing for the extension of aid to the establishment of shipyards and the building and operation of ships up to twenty-five in number. The following is a summary of the provisions of the Act:

1. A Shipping Credit Commission consisting of two Government appointees to act with the Deputy Minister of Finance.

2. Up to 55 per cent. of the value of a ship may be loaned by the Commission, this to be a first lien at 6 per cent. interest and 1 per cent. on the gross earnings of the vessel, repayable in five annual instalments.

During the currency of the loan the superintendent of the Commission is deemed to be the managing owner of the vessel; all charters to be approved by the Commission, who have control of rates. It is stipulated that only white labor shall be employed, and at "fair wages," and further that the vessel shall be "operated continuously" during the currency of the loan.

3. Commencing one year after the declaration of peace, a subsidy not exceeding $5 per deadweight ton capacity to be paid on vessels whose earnings fall short of 15 per cent. per annum, the subsidy calculated to bring the earnings up to that level.

4. Shipbuilding plants may borrow up to 55 per cent. of the cost of establishing and erecting the plant, and the Commission will guarantee the principal and interest at 6 per cent. unconditionally.

6. The subsidy to ships is limited to twenty-five ships built within the Province.

The First Ships.

The Act came into effect at the beginning of June, and was promptly followed by the placing of orders of the first eight of a probable twenty lumber ships. These eight ships are being built to the order of H. W. Brown & Co., Vancouver, who will probably operate the vessels when completed, under the name of the Canada West Coast Navigation Company. Contracts have been let for six of the vessels to the Wallace Shipyards, North Vancouver, and two to the Cameron & Genoa Mills, Limited, Victoria. Further orders will probably be placed shortly with shipyards at New Westminster and Prince Rupert.

The ships under construction and being planned will be built under the terms of Section 53 of the Shipping Bill, which grants a subsidy for ten years, to be paid in ten annual instalments not to exceed the sum of $5 per ton, to bring the earnings of the ships built under the Act up to 15 per cent. on the total cost.

Among the members of the syndicate behind the enterprise are: Mr. James Carruthers, President of the Canada Steamship Lines, which controls a large part of Canadian Great Lakes shipping, and operates steamers to Bermuda and the West Indies; Mr. J. W. Norcross, of Montreal, Vice-President of the same company; Mr. M. J. Haney, of Toronto, contractor; Sir Trevor Dawson, managing director of the armament and engineering firm of Vickers Limited of Great Britain, and Mr. R. M. Wolvin, prominent in Great Lakes shipping. Mr. James Whalen, general manager of the B. C. Sulphite Fibre Company, with pulp mills at Mill Creek on Howe Sound, is a prominent Vancouver backer and shareholder.

The cost of the vessels will be approximately $150,000 each, and they are a similar type to a number of motorsail ships now under construction on the Pacific Coast. The first of the ships being built by the Wallace Shipyards is to be named the "Mabel L. Brown," and work is progressing



UNIQUE VIEW OF LUMBER SCHOONER UNDER CONSTRUCTION

Inside the hull of the "Mabel L. Brown," the first schooner of its class being built in British Columbia. It is 225 feet long at keel; 44 feet beam and 22 feet deep; 265 feet in length over all.

—Copyright Photograph.

rapidly on this ship, while the keels of a further two are about to be laid, and the remaining three will follow as soon as the slips are made ready. The first vessel will be launched about the end of this year, and the others will follow at intervals of about six or eight weeks.

A New Type of Vessel.

The type of vessel is in many respects a new one, special attention having been given to economy of space, with a view to providing as much room as possible for lumber cargo.

They will be 225 feet long, 44 feet in breadth and 22 feet deep, baldheaded schooner-rigged on five masts, and equipped with two 160 horse-power Bolinder engines, driving twin screws. Six of the Bolinder engines will be shipped from Stockholm shortly, and there will be no difficulty in obtaining delivery of the requisite number. The lumber capacity of these ships will be approximately a million and a half feet. The length of 225 feet is on the keel, the overall length being 265 feet. It is estimated that the engines will drive the vessels seven knots without the aid of sails. The illustration herewith gives a good idea of the type of vessel. In addition to the motor ships being built for Brown & Company being the last word in wooden lumber-carrying construction, they will be the first ships anywhere to be built under and classified according to the recently remodelled rules of Lloyds Register of Shipping.

There has been great progress made in the last few years in wooden shipbuilding, particularly on this coast, and Lloyds' rules had up till lately become rather strict, so much so that most of the wooden ships build recently on the Pacific Coast have been classified according to the requirements of other shipping registers.

An examination of the question led the owners to believe that it would be advantageous to construct the ships under Lloyds' rules, the extra cost being more than offset by the saving in insurance in the long run. The matter was taken up with Lloyds, who sent a special surveyor to the Coast to look into the details of construction of the twenty to thirty auxiliary-powered lumber schooners now under construction on the Pacific Coast, and, as a result of his report, the vessels being built at Vancouver and Victoria have been placed under the supervision of Lloyds' agent for classification. Therefore, the "Mabel L. Brown," the first ship which will be launched about December, 1916, will have the best classification and be entitled to lower insurance than any other wooden boat ever built.

Designer of the Ships.

Mr. J. H. Price, the designer of several of the most successful lumber carriers built on the Pacific Coast, and the originator and designer of the recently completed schooner "City of Portland," the largest wooden schooner afloat, the vessel after which the schooners now being built at North Vancouver are modelled, is acting architect and superintendent of construction of the eight ships now being built for Brown & Company. Mr. Price is regarded in the shipping world as an authority on wooden auxiliary driven lumber schooners.

The "City of Portland" and her sisters being built at North Vancouver are a new departure in shipbuilding. Built along low lines, the space not available for cargo handling has been brought to an extreme minimum. Mr. Price estimates that cargo space on vessels of this type is 95 per cent. of the whole. The advantages of having auxiliary engines are figured in the statement that they represent the difference between interest on the cost of the vessels and real dividends.

The cut herewith shows the new plant of the Wallace Shipyards, Limited, at North Vancouver. The "Mabel L. Brown" may be seen in the photograph. Within a few weeks the Wallace Shipyards will have some 300 men at work in the construction of these vessels.

In addition to the wooden schooners, Wallace Shipyards are also constructing a steel freighter ordered by Dingwall, Cotts & Company, of Vancouver, for account of English interests. The freighter will be 315 feet long and 45 feet beam; she will have a carrying capacity of 5,000 tons, and a speed of nine and a half knots. The plans provide for a single deck, single screw steamer with two boilers, triple-expansion engines, eight winches and four hatches. The vessel will have four watertight bulkheads, and will be built to Lloyds' highest classification under special survey.

Arrangements are also under way for the construction of four steel freighters of 5,000 tons capacity each at Prince Rupert, B.C., at the Grand Trunk Pacific drydock plant.

ELIMINATING THE POSTAGE STAMP.

There has lately been placed in service by several American firms with unusually heavy mailings a postage meter which, instead of affixing the usual postage stamps on mail matter, makes an impression in the upper right-hand corner. The new postal meter performs several tasks, such as sealing, stamping, facing and counting approximately 250 pieces of mail matter per minute. The envelopes, unsealed and unstamped, are placed in a compartment of the machine much in the same manner as they would be placed in a box, the mechanism handling the envelopes automatically from that point. The stamping mechanism not only makes an impression on the envelopes, but also counts, the numbers appearing in a descending serial on top of the stamping meter. The meter is so made that its mechanism can only be adjusted by the post office authorities, who set it for the number of impressions the user has paid for. When that number of impressions is exhausted, the meter automatically locks and no longer stamps mail matter, necessitating its return to the post office for readjustment. The elimination of loss through fire or theft, the reduction of handling costs both in the mailer's establishment and in the post office, and the expediting of outgoing mail are but a few of the advantages this system offers over the adhesive stamp method. The impressions are not cancelled.—*Scientific American.*

TRADE BETWEEN CANADA AND BRISTOL.

The total trade between Canada and the port of Bristol for the calendar year 1915 amounted to 270,539 tons, of which 254,471 tons were imports and 16,068 tons exports. A decrease is therefore shown as compared with the year 1914 of 212,626 tons and 1913 of 169,570 tons, the trade between Canada and Bristol for these years being 488,165 tons and 440,109 tons, respectively.

The imports into Bristol from Canada showed a continual increase up to the year 1914, when the goods purchased amounted to 440,648 tons, but in 1915 the imports declined to 254,471 tons. The decrease is accounted for largely by the restricted available tonnage, the number of vessels entering the port of Bristol being in 1915 only 82, with a registered tonnage of 199,962, as compared with the year 1914, when 100 vessels entered the port having a registered tonnage of 357,010.

GOVERNMENT OWNERSHIP OF RAILWAYS IN CANADA*

By SAMUEL O. DUNN

THE subject of government ownership of railways is of perennial interest in the United States. Discussions of the subject usually move along two lines. One class of speakers and writers base their reasoning on certain assumptions as to the honesty, public spirit, and efficiency which would characterize a railway management representing the public. Their conclusions naturally correspond with their assumptions. Another class analyse the results of government management in one or a few countries, find them good or bad, and base on them conclusions as to whether the results in the United States would be good or bad.

Both of these kinds of reasoning have the same defect. They do not take enough account of the conditions in any given country under which a railway policy must be carried out. These conditions are of various kinds, physical, economic, political, and so on; and they largely determine the results of railway management and operation under either private or public ownership.

One of the mistakes most often made is that of ignoring the political conditions under which government ownership is, or would be, tried. The question is often treated as if it were merely one of economics. It is one both of economics and of political science. The efficiency and economy of a government are determined largely by how much it is influenced by politics of the low kind; and the influence of this kind of politics depends on the organization of the government and the attitude of the people. As the efficiency of a government as a whole must depend largely on the part played by politics, the way its railway department would be managed would necessarily be determined largely by the same cause.

The results of government railway management being largely determined by conditions, and especially by political conditions, the experience with government management in a single country, where the conditions are similar to those in the United States, may throw more light on the question in this country than much abstract reasoning, or than large amounts of data drawn from the experience of countries where the conditions are widely different.

Canadian and U. S. Conditions Similar.

There is no country whose conditions, physical, economic, and political, are more similar to those of the United States than those of Canada. The Dominion is an adjacent part of the same continent. The larger part of it is extremely like the conterminous larger part of the United States. Its natural resources, industries, and products are similar. Both countries are inhabited mainly by descendants of the peoples of Northern Europe, although this point might be pressed too far. With its big French population, Canada has a large representation of the Latin races. But the ancestries of the people of the United States are not all traceable to Northern Europe; and the French in Canada have as much political capacity as our many voters from Southern Europe, not to mention our millions of negroes. The government of the United States is a democratic republic. That of Canada is not a republic in form, but its people are as self-governing and its institutions are as democratic in fact as those of any country. There are considerable economic differences; but these are unimportant in comparison with the points of resemblance.

The results of government ownership and management of railways in Canada should, therefore, afford the most reliable indication available as to what would be the results in the United States. Canada has tried public ownership and her experience has been long and on a large scale. The Dominion has owned the Intercolonial Railway for forty-seven years, and certain of the colonial governments owned parts of it before. It has owned the Prince Edward Island Railway for forty-three years, and acquired it from the government of the island. The Intercolonial and Prince Edward Island have 1,736 miles of line; and the Dominion has recently built and is operating the National Transcontinental Railway, which has 2,067 miles. The Canadian government railways now have, combined, 3,803 miles of line.

The National Transcontinental Scandal.

The construction, by the government, of the National Transcontinental led to a scandal. The plan for its building was adopted in 1903. It was to run from Moncton to Quebec, and from Quebec to Winnipeg, and on its completion was to be leased to the Grand Trunk Pacific for 3 per cent on its cost of construction. The minister of finance presented to parliament a "liberal" estimate. Eighteen hundred miles were to cost $61,415,000, or $34,083 a mile. A government commission was created to handle the work. On September 30, 1911, the expenditures had reached $109,000,000; by the end of 1914 no less than $173,000,000, or about $99,000 a mile, had been spent; and at latest reports the total was about $200,000,000.

A new government commission was appointed in 1912 to investigate the work of the original government commission. It reported in 1914 that there had been gross mismanagement and extravagance, and the waste of many millions of dollars; and the Grand Trunk Pacific refused to take the property over for operation because it could not afford to pay 3 per cent. on its excessive cost.

The reports regarding the mismanagement of the construction of the National Transcontinental attracted much attention in the United States. As a matter of fact, the results of government construction of the National Transcontinental are typical of the results of public ownership in Canada ever since the various parts of the Intercolonial were acquired by the Dominion forty-seven years ago.

The Intercolonial, the Prince Edward Island, and the National Transcontinental all failed to earn their operating expenses in the year ended on June 30, 1915, their combined deficit from operation being $350,000. A stranger to the facts might attribute the results in 1915 partly to the effects of the war in Europe. For that reason, in the following study of government management in Canada, the statistics used are chiefly those of the year ended on June 30, 1914. The most attention has been given to the Intercolonial, because it is the only large road on the North American continent which has long been managed by a government.

The Intercolonial in 1914 had 1,457 miles of line. Its main lines run from Sydney and Halifax to Moncton, and thence to Quebec; and it serves the provinces of Nova Scotia,

*Reproduction of an article appearing in the July issue of the *Journal of Political Economy* which has attracted a good deal of attention both in the United States and Canada.

New Brunswick and Quebec. The Prince Edward Island is a narrow-gauge road of 279 miles, serving the island of that name, and is managed by the same organization. The acquisition of the Intercolonial was provided for by the act of federation of July 1, 1867. It was originally purchased and developed by the government mainly to bind together more firmly the French and English provinces. In 1876 it had 348 miles in New Brunswick, 222 miles in Nova Scotia and 375 miles which had been constructed by the government from Moncton, New Brunswick, to Rivière du Loup, Quebec—a total of 945 miles. From Rivière du Loup to the city of Quebec it leased a line from the Grand Trunk. The Prince Edward Island became a part of the government system when the island came into the confederation on July 1, 1873.

Profits or Taxes?

One of the arguments advanced for government ownership in the United States is that under it the profits made by the railways would be received by the public instead of going to private capitalists. Those who reason thus often forget that while railway companies, if successful, yield profits to private capitalists, they also, unlike state railways, pay taxes to the public. The experience of the world shows that the public while sure to collect large taxes from private railways, is not certain to receive any profits at all from state railways. Most of them do not earn interest on their investments.

Those of Canada afford an extreme illustration. The statistics which make the deepest impression on the student of their official reports are those showing their heavy losses; and official figures tell but a fraction of the story. The Canadian people and public officials have only the haziest idea as to what the losses actually have been. No one heretofore has gone thoroughly into the matter. Many know that in some years the roads have not earned their operating expenses, but that in other years the Intercolonial has done so. Therefore, most of them apparently believe that the total losses incurred, while considerable, have not been very great. No impression could be more erroneous. The total losses sustained have been enormous.

The combined cost to June 30, 1914, of the Intercolonial and the Prince Edward Island, as shown by the official reports, was $112,351,000, or $64,718 per mile. The cost per mile of the Intercolonial had been $70,815, and of the Prince Edward Island, $31,973.* Computed in a more correct way, their total cost to the public had been $381,000,000, or $219,000 per mile. This figure includes expenses and interest which they had failed to earn, but nothing for the taxes which the public would have collected from them if they had been privately owned. These railways are almost entirely single-track lines; they are not very well constructed, maintained or equipped; and yet their cost per mile to the public, properly computed, has exceeded the average capitalization of any railways in the world except those of Great Britain. Their losses in the fiscal year 1914, as shown by the official reports, were $445,000, this being the difference between their expenses and earnings. Properly computed, their losses in that year were almost $15,000,000. They can hardly have a physical value exceeding the $112,000,000, or $64,718 per mile, which they are officially represented to have cost. Assuming that they are worth this, the difference between their present value and the total amount they have cost the Canadian public is $268,000,000, or $154,378 a mile. This represents the absolute loss they have inflicted on the taxpayers of Canada. And this estimate, as already indicated, is really an underestimate, for it makes no allowance for the taxes the government would have collected from them if they had been privately owned. If the Intercolonial and Prince Edward Island were taxed at the same rate as the railways of the United States, their taxes would be $600,000 a year.

Conclusions so startling should not be stated unaccompanied by the reasoning and method of calculation used in arriving at them. Let us consider in mere detail, then, the official figures and the computations which may properly be based upon them.

The management of the Intercolonial by the Dominion government has covered forty-seven years. The official figures show that in twenty-two of these years its earnings have exceeded its operating expenses, its combined net earnings in these years having been $1,967,000. In the other twenty-five years its operating expenses have exceeded its earnings, and its combined deficits from operation in these years have been over $11,500,000. Therefore, under Government management its net deficit—allowing nothing for taxes or interest—has been $9,500,000. Still worse has been the plight of the Prince Edward Island. Its operating expenses have exceeded its earnings in every year the government has owned it, its total operating deficit in the years 1875-1914 having amounted to $3,280,000. The deficits from operation of the two roads under government management have been $12,800,000. Detailed statistics regarding the cost of construction, the operating expenses, the total earnings, and the net earnings, or deficits from operation, of the Intercolonial are given in columns 1 to 4 of Table I. Totals of similar figures for the Prince Edward Island Railway and for the government roads combined are appended to the table.

The figures of these first four columns, bad as they are, take no account of one of the most important factors to be considered. This is interest charges. Interest is as unavoidable a part of the cost of conducting any business as operating expenses. If the interest charges of a private railway are not earned, it becomes bankrupt. If those of a state railway are not earned, they must be paid from taxes. Nominally, the state railways of Canada have no debt. Actually, the investment represented and the losses incurred by them appear in the government debt and the interest paid on it, for, if the earnings of the railways had sufficed to pay their expenses and interest, the government debt and the interest on it would be proportionately smaller. Therefore, to ascertain approximately the true amount which the government railways have cost the public, we must ascertain not only what has been spent for their construction, but the expenses and interest that they have not earned.

True Cost of the Railways.

To do this the author has recast the official figures. To the original investment in the Intercolonial and the Prince Edward Island have been added the expenditures for new construction during the first year of public management, and interest on the original investment; and the net earnings or the net deficit from operation in the year—whichever resulted—has been deducted or added. This gives approximately the true cost of each railway to the public at the end of the first year of government management. This true cost has been taken as a new starting point, and made the basis of a similar calculation for the second year; and this process has been repeated year by year for the entire history of each road. The rate of interest used in the calculations is 4 per cent. When the Dominion acquired the railways the rate it had to pay on its general indebtedness was more than this. It appears in official reports that it paid 5 per cent. to the provincial government of Quebec for railway purposes up to 1905, and has paid 4.5 per cent. since. The use of an average rate of 4 per cent. for the entire period is, therefore, conservative. The results for both roads of the computations thus made are shown in the last column of Table I.

*Railway Statistics for the Dominion of Canada, published by the Department of Railways and Canals, 1914, p. xii. Capital cost per mile of the Intercolonial, as shown by Railway Statistics for 1915, was $75,066.

The combined total cost of construction of these lines on June 30, 1914, as officially reported, was $112,351,217, and the unearned interest on this lost in that year, at 4 per cent., was $4,494,048. Their combined operating expenses in the same year, as reported in Railway Statistics, the official publication, exceeded the total earnings by $445,380. (The actual deficits shown in the annual reports of 1913 and 1914, as existing at the end of the fiscal years ending on March 31, were ostensibly wiped out by "compassionate allowances" under special votes of Parliament!) Therefore, in 1914 their total deficit, after adding interest, as indicated by official figures, and allowing nothing for taxes, was $4,939,788. But this deficit for the year, which is demonstrable by the official figures, is small compared with the deficit shown by the corrected figures. The true total cost of the railways to the end of the fiscal year 1913 was $360,285,010. Unearned interest on this at 4 per cent. for the next year amounts to $14,411,400. This, together with the deficit from operation, makes a total deficit for the year 1914 of $14,856,780.

Since the Prince Edward Island Railway is a narrow-gauge

TABLE I.—INTERCOLONIAL RAILWAY.

Years*	Operating revenue	Operating expenses	Net earnings or operating deficit (—)	Official cost of construction	Actual cost to the public
1867	.....	.....	.....	$10,766,725 54	$10,766,726 00
1868	$420,752 58	$359,961 08	$60,791 50	11,250,079 19	11,619,957 00
1869	455,022 76	387,548 47	67,474 29	11,534,694 37	12,299,896 00
1870	471,245 09	445,208 75	26,036 34	13,262,075 86	14,495,237 00
1871	565,713 52	442,993 31	122,720,21	16,178,857 99	17,869,108 00
1872	622,900 56	595,076 22	27,824 34	21,309,999,50	23,687,190 00
1873	703,458 26	1,011,892 60	—308,434 34	26,511,449 87	30,144,562 00
1874	893,430 17	1,847,175 24	—953,745 07	30,126,348 68	35,918,988 00
1875	861,593 43	1,532,589 62	—670,996 19	33,552,448 23	41,452,843 00
1876	848,861 46	1,277,197 79	—428,336 33	34,660,769 82	44,647,615 00
1877	1,154,445 35	1,661,673 55	—507,228 20	35,979,122 01	48,259,100 00
1878	1,378,946 78	1,816,273 56	—432,326 78	36,387,938 75	51,030,608 00
1879	1,294,009 69	2,010,183 22	—716,083 53	36,614,577 94	54,014,555 00
1880	1,506,298 48	1,603,439 71	— 97,131 23	38,662,592 54	58,320,283 00
1881	1,760,393 92	1,759,851 27	542 65	39,271,325 34	61,287,699 00
1882	2,079,262 66	2,069,657 45	9,605 18	39,856,894 13	64,287,699 00
1883	2,370,910 10	2,360,373 27	17,547 18	41,473,527 09	68,458,293 00
1884	2,384,414 92	2,377,433 62	6,981 30	44,163,216 58	73,879,323 00
1885	2,441,203 66	2,519,751 56	— 78,547 90	45,410,223 03	78,160,050 00
1886	2,450,093 88	2,583,999 67	—133,905 79	46,090,579 37	82,100,714 00
1887	2,660,116 93	2,922,369 62	—262,252 69	47,014,309 44	86,570,726 00
1888	2,983,336 05	3,366,781 74	—383,445 69	48,727,292 73	92,129,984 00
1889	2,967,801 00	3,244,647 73	—276,847 73	51,340,586 76	98,705,325 00
1890	3,012,739 87	3,560,575 74	—847,835 87	53,310,431 46	105,471,219 00
1891	2,977,395 38	3,662,341 94	—684,946 56	54,260,512 44	111,325,096 00
1892	2,945,441 97	3,439,377 00	—493,935 03	54,577,296 40	116,588,819 00
1893	3,065,499 09	3,045,317 50	20,181 59	54,874,186 83	121,529,080 00
1894	2,987,510 17	2,981,671 98	5,838 29	55,311,720 61	126,821,939 00
1895	2,940,717 95	2,936,902 74	3,815 21	55,638,755 12	132,218,037 00
1896	2,957,670 10	3,012,827 62	— 55,187 52	55,897,860 35	137,821,051 00
1897	2,866,028 02	2,925,968 67	— 59,940 65	56,046,972 87	143,542,947 00
1898	3,117,669 85	3,327,648 51	—209,978 66	56,299,729 67	149,747,401 00
1899	3,738,331 44	3,675,686 21	62,645 43	57,381,659 61	156,756,582 00
1900	4,552,071 71	4,431,404 69	120,667 02	60,637,007 81	166,161,526 00
1901	4,972,235 87	5,460,404 64	—488,186 77	64,270,844 38	176,930,011 00
1902	5,671,385 91	5,574,563 30	96,822 61	68,897,685 43	188,537,229 00
1903	6,324,323 72	6,196,653 19	127,670 53	71,151,952 11	198,205,314 00
1904	6,339,231 43	7,239,982 04	—900,750 61	73,032,808 71	208,915,135 00
1905	6,783,522 83	8,508,826 75	—1,725,303 92	77,770,430 64	223,734,666 00
1906	7,643,829 90	7,881,914 36	61,915 54	81,535,601 54	236,387,308 00
1907	6,248,311 00	6,030,171 83	218,139 17	83,041,810 80	247,130,870 00
1908	9,173,558 80	9,157,435 53	16,123 27	87,424,304 00	261,382,476 00
1909	8,527,069 46	9,328,021 55	—800,952 09	91,291,536 00	276,505,959 00
1910	9,268,234 99	8,645,070 33	623,164 66	92,569,945 00	288,221,441 00
1911	9,863,783 40	9,595,976 79	267,806 61	93,332,814 00	300,245,361 00
1912	10,593,785 84	10,591,035 84	2,750 00	95,141,659 00	314,061,270 00
1913	11,984,482 69	11,984,482 69	.....	97,533,647 00	328,020,209 00
1914	12,878,549 00	12,878,549 00‡	.....	103,430,848 00	348,089,518 00
Total, Intercolonial Railway, 47 years	$184,707,592 00	$194,268,891 00	—$9,565,036 00	$103,430,848 00§	$348,089,518 00
Total, Prince Edward Island Ry., 40 years...	7,759,846 00	11,040,128 00	— 3,280.282 00	8,920,369 00	32,902,398 00
Total, both government railways, since act of confederation	192,467,438 00	205,309,019 00	—12,845,318 00	112,351,217 00	380,991,916 00

*Until 1907, the fiscal year ended on June 30; since that date on March 31. The figures for 1907 as given in the table are for nine months.

†Of this total $4,500 was paid for "compassionate allowances" by special vote of Parliament.

‡Of this total $11,300 was paid for "compassionate allowances" by special vote of Parliament.

§Total capital cost of the Intercolonial reported in Railway Statistics, published by the department for June 30, 1914. The cost as given in the annual report—$101,468,073—does not include several construction items carried in separate accounts, but which are included in accounts showing results of operation.

line, serving only the island of that name, it may be that in its case the obstacles to profitable operation are insuperable. Entirely different is the situation of the Intercolonial. It is a standard-gauge road with a large mileage in a territory similar to parts of Eastern Canada and the United States in which privately managed railways operate with profit. Considering the Intercolonial separately, its cost of construction, to 1914, as officially reported, was $103,430,848, or $70,815 a mile[1]. The unearned interest on this in 1914 at 4 per cent. was $4,137,233. Its actual deficit from operation was $291,270. Therefore its total loss in that year, as demonstrable by the official figures, was $4,428,503. But its total cost, including its losses, up to the beginning of the fiscal year 1914, amounted to $348,089,518. Unearned interest on this at 4 per cent. was $13,923,580, which together with the operating deficit makes a total deficit for the year ended June 30, 1914, of $14,214,850. And this allows nothing for the taxes the road would pay if privately owned. Such is the price the taxpayers of Canada are paying for government ownership!

There is in Intercolonial history a minor illustration of the fact that government ownership is less fatal to financial success than governmental management. The Windsor branch, from Windsor Junction to Windsor, Nova Scotia, is a part of the road. It is thirty-two miles long. Since 1881 it has been leased to operating companies, and since 1911 it has been operated under lease by the Canadian Pacific. In every year but one since 1881 the government has received net earnings from it. It is maintained by the Intercolonial, and the government receives as rental one-third of its gross receipts. In the last twenty years the amount of net earnings, after deducting maintenance expenses, has varied from $15,000 to $30,000 per year.[2] The net earnings of the branch, in the aggregate, from 1881 to 1914, were $662,555; and they account for more than one-third of all the net earnings the Intercolonial has made since 1867.

The Canadian state railways are an utter financial failure. The losses are due to low rates, to extravagant management, or to both. Many consider it expedient to make low rates on state railways, even if this causes deficits; and it can be said for this practice that those who pay the rates gain what the taxpayers lose. If the losses are due to wastefulness, the management obviously cannot be defended on any ground.

Unremunerative Rates.

Before we inquire to what extent the losses incurred have been due to the rates made, let us consider whether it can be sound policy for railways to make unremunerative rates at the expense of the taxpayers. Either those who pay non-compensatory rates and those who pay the taxes levied to meet the deficits they cause are the same people, or they are different people. If they are the same people, what they gain by the rates is taken from them in increased taxes. If they are different people, those who pay the rates get their transportation for less than cost and those who pay the taxes pay for something they do not get. It is hard to see how anybody can be benefited by saving money through low rates and having it all taken away in increased taxes. It is also hard to find justice in giving some people low rates at the cost to others of higher taxes.

Both common-sense and equity require rates to be so fixed that those who receive transportation service shall pay for it in full. The application of this principle to the situation in Canada makes it easy to decide in regard to the soundness of the rate-making policy followed on the government railways, if to it are due their losses. These railways serve only the people of the eastern provinces, and but part of them. The people of the entire Dominion must pay the taxes levied by the government. Therefore, if the trouble with the government railways is that their rates are too low, the few who use their service are unfairly benefiting at the expense of all the people of the country.

In spite of its chronic deficits, the freight rates of the Prince Edward Island Railway are very high, averaging over 4 cents per ton per mile. Its passenger rates are relatively low, averaging about 1.75 cents. But the Prince Edward Island is small and serves a restricted territory.. The rates of the Intercolonial are more instructive. The average rate per passenger per mile on the railways of the United States in 1914 was 1.98 cents, and on all the railways of Canada, 2 cents.[1] On the Intercolonial it was 1.67 cents.[2] The average rate per ton per mile in the United States was 7.33 mills, and in Canada, 7.42 mills.[3] On the Intercolonial it was only 6 mills.[4]

Rate Comparisons Misleading.

But comparison of the rates of a single railway with those of the railways of a whole country may be misleading. For example, while the average freight rate of the Intercolonial is lower than the average rate of all the railways of the United States, there are many individual lines in this country whose average rates are lower than its average rate. The average in 1914 for the entire eastern district of the United States, in which one-half of all the freight tonnage is moved, was only 6.39 mills.[5]

In the eastern parts of both Canada and the United States the rates generally are lower than in the western parts. This is due to various causes. In the eastern part of this country the freight traffic is dense, and the rates for years were determined by fierce competition, which reduced them to a low basis. The effects were felt in Eastern Canada. There is a great deal of traffic which moves on railways partly in that country and partly in the United States. Among these lines are the Canadian Pacific, the Grand Trunk and the Michigan Central. In fighting for their shares of this competitive business, these roads made their through rates the same as those of rival lines in the United States, and had to put their local rates in Canada on a corresponding basis. The rates of the Intercolonial were affected by this policy.

The territory through which, and the conditions under which, the Intercolonial operates are, of course, similar to those of the private railways of Eastern Canada. Therefore, its rates may most fairly be compared with theirs. The principal privately owned lines serving that section are the Canadian Pacific and the Grand Trunk. Unfortunately, it is not easy to compare their rates with the Intercolonial's. The Intercolonial's lines begin at Montreal and extend to the Atlantic seaboard at St. John, Halifax and Sydney. The Canadian Pacific divides its western and eastern lines at Port Arthur and Fort William, on the western boundary of Lake Superior. Therefore, while its eastern lines extend as far east as the Intercolonial's, they include a mileage extending more than 1,000 miles farther west than the Intercolonial extends. The Grand Trunk has more mileage west of Montreal than east of it. Because of these facts the average rates of the Grand Trunk and the eastern lines of the Canadian Pacific probably would be higher than those of the Intercolonial, even if their absolute rates in the parts of their territory corresponding to its territory were the same.

There is another factor of no small importance to consider. This is the relatively great length of the Intercolonial's lines between its main terminals. The immediate purpose of its

[1]Railway Statistics of the Dominion of Canada, 1914, p. xii.
[2]Annual Report, Department of Railways and Canals, 1914, p. 420.

[1]Railway Statistics, 1914, p. xxiv.
[2]Ibid., p. 46. [3]Ibid. p. xxvi. [4]Ibid., p. 48.
[5]Statistics of Railways in the U. S., Interstate Com. Commission.

original acquisition and development by the Dominion[6] was to bind more firmly together the Maritime Provinces, whose population was chiefly French, and the rest of the Dominion. To accomplish this it was necessary to build a line to Montreal. There was friction between Canada and the United States. It was feared that if this line was built nearer the border it would, in case of war, fall into the hands of the United States.[7] Therefore, a route was surveyed as far as possible from the border. This extended northward to the wild, inhospitable and almost unpeopled shores of the Gulf of St. Lawrence and the St. Lawrence River, and thence southward to Quebec and Montreal, making a roundabout and expensive way to handle traffic moving between Sydney, Halifax and St. John, and Quebec and Montreal.

Friction between the United States and Canada long ago ceased. The Canadian Pacific has built a much shorter line, partly in Canada and partly in the State of Maine, to the Atlantic seaboard, and has almost completed another which runs entirely in Canada and is also shorter than the Intercolonial. An enterprising management would years ago have built a cut-off to shorten the mileage of the Intercolonial between important points, thereby enabling it to compete more successfully for through traffic and to reduce the cost of handling it. Recently the Government has built the National Transcontinental, with a shorter line between Moncton and Quebec; but it was intended to lease this to the Grand Trunk Pacific, a private corporation, and the Government has assumed its operation only because the Grand Trunk declines to pay a rental of 3 per cent. on its excessive cost. Because of the original location of the Intercolonial and the persistent error made in not reducing its length, its mileage between Halifax and Montreal is 837 miles, while that of the Canadian Pacific is only 758 miles. From St. John to Montreal by the Intercolonial is 740 miles; by the Canadian Pacific only 483 miles.[8] The Intercolonial in moving a ton of freight from Halifax to Montreal carries it 10.4 per cent. more miles than the Canadian Pacific, and in moving a ton from St. John to Montreal carries it 53.2 per cent. more miles.

The effect produced on the comparative average rates per mile of the Intercolonial and the Canadian Pacific is obvious. The Intercolonial cannot charge a higher absolute rate between any two points than the Canadian Pacific. But when a shipment moves over it, the absolute rate must be divided by a larger mileage to ascertain the average per mile. Therefore, while the actual rates of the two roads between competitive points are the same, the average per mile received by the Intercolonial on through business is smaller than that received by the Canadian Pacific. This causes the average rates per mile of the Intercolonial to give the impression that its actual rates are lower in comparison with those of the other railways of Eastern Canada than they are.

TABLE II.

	1914			1915		
	Intercolonial	C.P.R. Eastern Lines	Grand Trunk	Intercolonial	C.P.R. Eastern Lines	Grand Trunk
Average receipts per passenger per mile, cents	1.669	1.808	1.778	1.82	1.894	1.753
Average receipts per ton per mile, cents	0.600	0.716	0.687	0.52	0.719	.687

These considerations show why it is hard to make a fair comparison between the average rates of the Grand Trunk, the eastern lines of the Canadian Pacific, and the Intercolonial. But a detailed comparison of their actual rates would be out of the question; and if the various points mentioned be given due weight, a comparison of their average rates may be instructive. Table II gives their average rates for the two years ending on June 30, 1914, and June 30, 1915.[1]

The through rates of the Intercolonial are necessarily the same as those of competing lines. Considering all the conditions, the statistics indicate that its local rates are somewhat lower than those of other lines in corresponding territory; and one of its higher officers expressed to the writer the opinion that they are about 10 per cent. lower.

If this is correct, the losses of the Intercolonial are due partly to the lowness of its rates, but more largely to other causes. Its total earnings per mile in 1914 were $8,625. In order to have paid its operating expenses at 4 per cent. on its cost of construction as officially reported, it would have had to earn $11,541, or 34 per cent. more than it did, and its rates would have had to be at least 34 per cent. higher. This would have made both its average passenger rate and its average freight rate considerably higher than those of the Canadian Pacific or Grand Trunk.

Not more than one-third of the losses of the Intercolonial can be attributed to its rates. Even this one-third cannot be defended. Like its other losses, this part is defrayed from taxes. The people of the whole country are thus obliged to pay for a large part of the transportation furnished to those who travel and ship over the Intercolonial. If the government charged their travelers and shippers higher rates and voted them an equivalent subsidy, the results to all concerned would be the same, while the public would clearly perceive the true character and significance of the policy followed.

(The concluding part of this article will be published next month.)

[6]See Act of Confederation.
[7]Encyclopedia Britannica, 11th ed., article "Canada" (Railways).
[8]Official Railway Guide.

[1]Railway Statistics of the Dominion of Canada for years named, and official information as to Canadian Pacific eastern lines.

REVIVAL OF BARK INDUSTRY.

A notable business feature arising out of the war has been the revival of the hemlock bark industry in New Brunswick. The scarcity of tanning acids has led the leather tanners to return to the old bark tanning process, and as a result large shipments of the bark are being made from the province. Bark dealers get about $8 per cord for the product.

JOINS WILLYS-OVERLAND CO.

The important announcement was made last month that E. B. Jackson, formerly President of the New York branch of the Packard Motor Car Co., had become identified in an executive capacity with the Willys-Overland Company, as assistant to C. A. Earl, vice-president of that organization. Mr. Jackson is a man of wide experience in the automobile business and has built up a reputation for extraordinary executive ability. Temporarily, at least, Mr. Jackson will devote his time to completing the extensive metropolitan organization which the Willys-Overland Company is building up for its New York trade. Because of his past experience it is generally considered that Mr. Jackson is especially fitted for this work.

More than one million dollars is being expended by the Overland Company on its New York branch, and when completed it is to outrank anything of its kind in the world, both in size and equipment. Mr. Jackson has entered on his new duties with all his customary vim and energy, and, with the strong Overland organization back of him, there is no doubt but what he will set a pace which will be difficult for his competitors to follow.

SOME FIRE CAUSES AND THEIR PREVENTION

By ROBERT PALM
Member, National Fire Protection Association

IN looking over classifications of fires one cannot fail to note the recurrence of the comment, "Cause unknown." This, of course, does not signify that the causes of fires in general or what will lead up to them are not understood, but the causes of the particular fires in question have not been ascertained, chiefly for the reason that the evidences have been destroyed.

The systematic investigations of fires that have been conducted for years, chiefly under the direction or through the influences of the National Fire Protection Association, have established practically beyond a doubt the causes that produce fires and the conditions that lead up to these causes, and furthermore that in a majority of cases the fires are due to very simple causes, and that the conditions that foster these causes can readily be remedied or obviated.

The lack of appreciation of the causes that to most people appear insignificant or immaterial—such as a bit of oily waste, a small pile of sweepings, some bits of paper collected in a corner or in some out-of-the-way place, or a steam pipe in contact with woodwork, which results in these matters being entirely overlooked or ignored, while the attention may be focused upon and the efforts directed toward remedying the obvious causes and glaring conditions, is undoubtedly prolific in producing a very large percentage, if not the majority, of our fires, and the consequent enormous fire losses.

It is not the intention in this article to expound theories regarding the origin of fires or to enter upon any technical discussion relative to the causes, but to present briefly some facts concerning these matters that should be borne in mind and to suggest some means of prevention.

Lack of Cleanliness.

Among the most frequent causes of fires the lack of cleanliness probably ranks first.

Cleanliness, the avoidance of litter, sweepings and rubbish, should be made a requirement of prime importance in every establishment.

All refuse and sweepings should be removed periodically and at the close of the working period, and in no instance should sweepings be kept in other than approved, properly covered metal receptacles until removed. Care should also be exercised in the proper separation of the refuse so that any which is considered in the nature of a by-product, or which is to be used over again, be kept free from foreign substances that are liable in themselves or in combination with the refuse in question, to produce conditions favorable to spontaneous combustion or ready ignition.

All sweepings and worthless refuse that is combustible should be burned daily. Shavings should never be permitted on the floors after working hours, and under no circumstances should saw or wood dust remain underneath machinery, producing the same for the reasons that drippings of oil or a bit of waste covered by the sawdust may ignite, or that a spark lodging in the dust may smoulder for hours before kindling a fire. The same holds true of all dry grinding, polishing and buffing wheels, and refuse resulting from the use of these must never be allowed to remain on the floors at the close of working hours. Properly installed metal exhaust systems discharging to the outside of the premises or into fireproof bins or rooms, well cut off, should be used to remove this refuse continually.

Oily waste and rags, especially if used for wiping off paint and linseed oil, and printers' rags, should never be permitted on the premises overnight or after working hours. These should invariably be kept in standard, self-closing metal waste cans when not in actual use; the practice of carrying a bit of oily waste in the pocket to be used here and there is an ever-ready means of inviting a fire. It is far more economical in the long run to provide cans where needed and keep the waste in them while not in use.

Keep all corners, closets, spaces underneath work benches, spaces underneath stairs, etc., free from litter and rubbish at all times, and do not permit such places to be used as stations for waste and rubbish cans, only to be overlooked and neglected.

Care of Clothing Necessary.

The care of clothing worn in factories should receive proper attention. Individual lockers should be provided for them. This should not be considered only as a means of convenience to the employees in the proper care of their street clothing, but more particularly for the isolation of the working clothes, especially when such apparel is liable to be oily. These lockers should be of metal, well constructed, and ventilated. They should be placed in well-lighted, accessible places, and never close to steam pipes.

Cloth or paper clippings and scrap rubber, particularly bits of old rubber packing, rubber-lined hose and rubber belting, should not be permitted to accumulate promiscuously; if such materials must be kept until a quantity sufficient for disposal is obtained, suitable metal or metal-lined bins should be provided for this purpose. The same may be said of scrap leather or leather dust, especially when greasy.

Leather scrapings and leather buffing dust should receive the same precautions. The scrapings of wooden blocks used for cutting leather should be burned as made. These blocks are usually treated with linseed oil or a linseed oil compound, and the scrapings when collected in a compact mass ignite very readily.

Iron turnings and borings should be kept clean and dry, free from general refuse and waste. These substances under certain conditions readily ignite, and moisture has been known to hasten oxidation so rapidly as to evolve sufficient heat to produce fire.

Avoid accumulations of junk and rubbish. These may not ignite nor be subject to ignition, but it is impossible to keep an accumulation of odd bits of machinery, pulleys, shafting, barrels, boxes, etc., free from general refuse, and they thus become veritable breeding places of fires. When it is necessary to keep such materials they should be properly stored by themselves and in such localities where there is no possibility of their harboring litter.

Ashes should never be kept in wooden containers. When produced in large quantities as in boiler-rooms, from furnaces or forges, they should preferably be stored in masonry vaults or bins unless removal is made daily. Otherwise they should be placed in metal receptacles. Never pile ashes against woodwork, even if apparently cold.

Oils and Other Chemicals.

Oils of all kinds should receive proper attention. This is especially true of vegetable oils, such as linseed, china, rape, cotton seed and olive oils, which oxidize readily, and in com-

bination with organic matter, such as cotton waste, rags, saw dust, etc., are subject to spontaneous combustion. Fire-proof oil-rooms, properly vented and drained, with standard fire-door at entrance, or, better still, outside fire-proof oil-houses similarly arranged should be provided for the storage of oils, other than those in actual use, which should invariably be kept in closed metal oil tanks or cans. Kerosene should never be used for the purpose of kindling fires. This refers equally to the practice of adding oil to the fuel before lighting the fires as well as after the fire has been started.

Naphtha in its various forms, such as benzine, gasoline, etc., is probably the most hazardous of materials that can be kept in a building, not alone because it is so readily inflammable, but because it will ignite at a considerable distance from an open flame owing to the fact that the vapors of these substances, which are given off continuously, travel or spread in the lower strata of the atmosphere only a few feet above the ground, especially when the air is "heavy," *i.e.*, in humid weather. These vapors or gases when reaching a flame will flash back to their source even in the open, and if in a room of comparatively small area are apt to add an explosion hazard.

In using naphtha in any of its form, not only should extreme care be taken that it is not used any where near an open light or fire or where exposed to sparks of any kind, but that it is not exposed to the influence of static electricity. The mere rubbing of silk during the process of cleaning, or rapidly repeated immersions of silk in benzine has frequently been the cause of fires. Friction of any kind that is liable to produce static electricity in connection with the use of these substances should be avoided; fires have been known to have been caused by cleaning gloves with benzine while drawn on the cleaner's hands.

These liquids, if needed, (unless in detached and in especially arranged and constructed buildings, and then under proper safeguards) should be kept only in the smallest quantities consistent with the purpose for which they are to be used, and then in metal "safety," *i.e.*, self-closing cans, of which there are several and approved types in the market.

There are on sale certain cleaning fluids, frequently worked off on the unsuspecting householder by unscrupulous vendors under various names which are nothing else than benzine, at times disguised by some cheap aromatic essential oil. In a measure these are even worse than benzine, owing to their disguise. (In this connection it may be well to state that no reference is had to tetrachloride of carbon, or alkaline or saponified preparations).

There are also various polishing liquids which contain benzine or gasolene (readily detected by their odor or by carefully testing a small quantity by applying a match to it or otherwise ascertaining its flash point) and certain stove polishes of similar nature. All these should be kept in tightly closed receptacles, should never be used near open lights or flame of any kind, and the stove polishes should be kept away from hot stoves. As a matter of precaution none of these preparations should be used, since their use by the unsuspecting purchaser is apt to result in fire and injury, and it were well if the sale of these preparations were prohibited entirely.

Similar in nature are alcohol and the solutions in which they are used, and carbon di-sulphide, which is used variously as a solvent for waterproofing and insulating paints and varnishes, as well as a refrigerant and destroyer of insects. These should be kept in properly closed metal receptacles and away from fires, open lights, etc.

Closely allied to the foregoing, in so far as their hazardous nature is concerned, are the various collodion or celluloid varnishes and lacquers known under various trade names, the most common, perhaps, being "Banana Oil," so called probably on account of its odor, similar to that of decaying bananas. These different lacquers used chiefly in coating metals, bronzing, and the preparation of certain patent leathers, are to be carefully guarded against. The nature of these compositions, even by a large number of their users, does not appear to be understood, and consequently the hazards associated are not fully appreciated. The use of these substances should never be permitted in rooms where the vapors which are given off quite freely are exposed to open lights, or even electric lights, unless provided with keyless sockets and in vapor-proof globes; controlling switches and fuses should be located outside of such rooms. These precautions apply equally to naphtha or alcohol and the derivatives and combinations of these with other substances.

In connection with these preparations, it is well to bear in mind celluloid and similar substances. All of these, like collodion solutions, contain nitro-cellulose, closely allied to gun-cotton, besides other ingredients highly inflammable. While articles made from these substances are in general use and serve many excellent purposes, their nature should not be lost sight of, and the fact that they ignite very readily and burn briskly when brought in contact with open flame should always be borne in mind.

The Removal of Dust.

What has been stated in regard to dust from woodworking and buffing machinery, namely, the necessity of prompt removal, holds true even more emphatically in regard to dust resulting from grinding or similar operations, where either the surrounding atmosphere or the apparatus itself becomes surcharged with finely divided particles.

The conditions in these cases are especially conducive to rapid and violent combustion, termed "dust explosion," which not only constitutes a fire hazard, but especially a serious hazard to life, not to mention the liability of destruction of apparatus and property. In all plants where processes resulting in the production of dust is carried on it is essential that the apparatus be so designed, installed and maintained that there can be no escape of the finely divided particles; that there is no liability of friction or striking together of parts of the apparatus; that no foreign substances, especially sand, grit or metal, can enter and cause sparking, and that the accumulation and discharge of static electricity be guarded against by proper grounding of the machinery and the use of collectors in connection of the belts to carry off any static electricity to the ground. All such apparatus, including connecting spouts and ducts, should be vented to the outside of the buildings in as direct a line as possible, such vents should be of liberal size, being preferably taken off at the bends or turns of the ducts. This should be in addition to the cyclone dust collectors, unless these are in a direct, preferably vertical line, from the apparatus and outside of the building.

When open vents are impracticable, balanced hinged-covers, which can be made to fit tightly without binding or sticking, can be provided. These arrangements, in case of an ignition of the dust, will permit the force of the explosion to spend itself in the outer air.

Any possibility of arcing or grounds from electrical systems or apparatus in such plants must be obviated by the installation of non-arcing and dust vapor-proof electrical appliances. All other kinds than electric lighting and the use of open flames, torches, lights, etc., must be prohibited in such plants when in operation.

Certain metals in a finely divided state are similarly subject to rapid combustion. Aluminum bronze powders come under this group, and in the manufacture of these substances precautions must be taken accordingly.

Various combinations of chemicals, of which sugar and chlorate of potash, saltpetre and organic substances (nitre

bags, as an example), and lime in combining with water need only be mentioned, illustrate the care that must be exercised in handling such materials. Such substances must be kept in tight containers and never close to materials, a combination with which would give rise to conditions resulting in fires or explosions.

Lime should invariably be stored in dry localities. Similar precautions should be taken with certain of the acids, especially nitric and sulphuric or oil of vitriol. These when brought in contact with organic matter are liable to cause combustion.

Such substances as coal and charcoal, especially if in a finely divided state, and lampblack, require proper attention. All of these under certain conditions in combination with moisture, or with a slight admixture of oil, are subject to spontaneous combustion; bituminous coal particularly is subject to spontaneous combustion if permitted to remain undisturbed in large quantities for a length of time.

The Placing of Boilers.

Boilers and their settings should be kept free and clear of all woodwork and be located preferably in buildings of fire resistive construction and cut off. Where this is impracticable and the boiler houses have timbered or wooden roofs, these should be of ample height and ventilated, and the woodwork should at least be kept thoroughly whitewashed, if no more permanent means of protection can be provided.

All breechings, uptakes and stacks must be entirely removed from any woodwork. All metal stacks or flues passing through woodwork must be provided with double, ventilating collars or sleeves, and under no consideration should timbers or wooden supports of any kind be permitted to enter brick stacks. There should be a clearance between the stacks and any woodwork of not less than four inches, and the latter should be protected with sheet metal on the exposed sides. Proper flashings and hoods can be provided to keep out the weather at roof passages.

All steam pipes should be kept away from woodwork by means of iron brackets, hangers or separators, and must be provided with ventilating collars—preferably double, where passing through combustible floors, ceilings or partitions. These collars should be so arranged as to permit an air space clear around the pipe, and if necessary be provided with a shield or covering which will prevent the accumulation of refuse between the pipe and the collar.

Similar precautions to the foregoing should be taken with all heating appliances as well as stoves in general. Where stoves are used these should never be located near unprotected woodwork, nor on bare wooden floors. Stove pipes must not be permitted to pass through wooden or framed partitions. All chimneys and chimney flues should be built strictly in accordance with the rules and requirements of the National Board of Fire Underwriters.

All electrical equipment should be installed in accordance with National Electric Code, and no extensions or alterations should be made by unauthorized persons or novices. Flexible cords should be kept free from contact with metal, and should be replaced when showing signs of wear or abrasion. Only reenforced cord should be used when the extensions or portables are subjected to more than ordinary usage. Generators and motors must be located in localities free from moisture and dust, and should be in charge of competent persons only.

Most establishments have some special apparatus, such as forges, blow-torches, soldering outfits, etc., or some particular machine developing a special hazard, or there may be some step in the processes or operations involved that present conditions that are more than ordinarily conducive to fires. All these should be surrounded by proper safeguards, and if possible isolated.

The present time is considered an age of efficiency in which the prime object appears to be increased production with a minimum of cost. There can be no question about the advantages of efficiency methods if sanely directed and broadly applied, but in the application of these methods, fire prevention must be recognized.

The system which aims to avoid useless energy, to make every minute count and to abolish needless expenses must lay particular stress on the safeguarding against fire, and to accomplish this must include systematic and intelligent operations along the lines of fire prevention. To this end there must be intelligent care and constant supervision, and the responsibilities for these should be definitely vested. What is everybody's business is no one's business applies to the safeguarding of the premises as fully as to every other line operation. This is particularly the case during periods of "rush orders," when there is apt to be a disposition to disregard the precautions observed under normal conditions.

In brief, the entire question of fire prevention might be summed up in the observance of proper care and cleanliness, a knowledge of the nature of the materials used and produced, and the processes involved, systematic and responsible supervision and particularly close attention to the apparently minor matters which are so frequently lost sight of.

NEW STEAMSHIP SERVICE.

Recently a visit was paid to Bristol by the officials of the Cunard Steamship Company in connection with the inauguration of a service between Canada and Avonmouth, this company having taken over the rights of the Canadian Northern Steamship Company. While the war lasts the service must necessarily be limited, but on its conclusion important developments are looked forward to. With the addition of the boats of this line to those of the Canadian Pacific Ocean Services, Limited, and the White Star Dominion Line already in operation a much better and more regular steamship service between Canada and Bristol is anticipated.

SAMPLE SHOW-ROOMS FOR BRITISH-MADE GOODS IN ITALY.

The British Chamber of Commerce for Italy has established at Genoa show-rooms for exhibiting goods made in the British Empire. The new headquarters of the Chamber are at: 7 Via Carlo Felice, Genoa, Italy.

Everything is now ready for the reception of samples. The Commercial Intelligence Branch of the Department of Trade and Commerce have received information to the fact that Canadian samples of manufactured goods would be admitted on the same terms as those from Great Britain. The sample rooms are situated in a very central position in a main street and near the Italian Chamber of Commerce, the Bourse, and the principal banks. The rooms are lofty and are adapted for the sample exhibition.

The offices of the Chamber are in the same premises and all callers will pass through the show-rooms, which it is intended to keep open daily during working days from 10-12 a.m. and 2-5 p.m.

As the available space is limited, Canadian firms who are interested are advised to apply forthwith for what they require, even if not in a position to send their exhibits at once. It is pointed out that exhibits should be selected with a special view to business after the war.

Applications for space will be dealt with as received, but the Council cannot guarantee allotment for any applications or accept any responsibility beyond what is laid down in the accompanying rules.

THE ADDITIONAL SIX PER CENT. PROFIT

By JAY CHAPIN
Chapin, Churchill & Co., St. Catharines, Ont.

"WHAT is the percentage of profit on this business?" is the usual and the most vital question asked at the Board meeting, after the figures of the current sales have been stated.

To maintain dividends, profits must be maintained, and to do this continuously, year in and year out, calls for real management.

Must we not first recognize the fact that general business conditions, over which the manufacturer has no control, rise and fall, just as certainly as do the tides: even though the conditions which cause such changes are too numerous and too complex, to permit of any certain forecast.

In times of depression, the reduced volume of business is somewhat offset by the very favorable cost of materials, and better supply of labor. In times of general business activity, material and labor costs usually advance more rapidly and farther than the prices on finished products, so that it is then the larger volume of business which makes satisfactory net profits possible.

Knowing well in advance that these changes in business activity are bound to occur, it becomes necessary for the manager to consider this as one of the essential conditions to provide for. In fact, to treat the business as if it were uniformly stable is obviously an entirely wrong viewpoint and cannot possibly lead to maximum returns, no matter how well equipped the plant.

It is important, then, for every executive not only to consider and heed the general and external conditions, but to carefully watch the indications which will be furnished him by the business itself. Every manager does this, so far as current sales and shipments are concerned, but they only tell a portion of the story.

The Rule of a Successful Manufacturer.

A successful manufacturer, who is the active executive in several industries, different entirely in nature one from the other, was asked how he had been able to do so well in securing for his stockholders steady and very satisfactory dividends in each of the three entirely different industries. The information, which he was willing to give, is sufficiently interesting to almost every manufacturer, to state here in detail:—

His reply was that he depended upon his superintendents for the technical details in each of his industries, the maintenance of quality, and the usual executive supervision of the factories, and that, without special attention on his part, he could figure on at least six per cent. profit on sales.

He recognized, however, that it was humanly impossible for the superintendent to detect, or to measure the changes gradually occcuring over a thirty-day period, so that he considered a further supervision was important as a means of securing and protecting profits. Consequently, he made it a point to keep special watch of six features, each of which he considered good for an additional one per cent. profit if properly maintained. These were:—

1. A proper balancing of production by departments, to avoid over-stocking or under-stocking of different products or parts.
2. Continuous and regular movement of goods in process, through the plant.
3. Giving special attention to keeping machines steadily in operation and locating reasons for any noticeable variation from a definite standard.
4. Watching carefully the percentage of labor cost to the finished product (each week).
5. Discontinuing entirely, or permitting but minimum sales, of any products, which, by reason of changed conditions, could no longer be sold at a fair profit.
6. Keeping the percentage of waste to a fixed standard.

He said, further, that he naturally expected that some one or other of these six features would depart from normal every now and then—in fact, they were sure to—that is why he kept watch of them; but not for long, as his subordinates knew that he was less interested in explanations than results.

Records Not too Complex.

In connection with securing data of this sort, for the executive, elaborate or over-complex records are a mistake, and there has been a proper objection on the part of factory managers to cost systems or records, which collect a quantity of figures that are not further examined or made practical use of. Satisfactory records can be secured in the average plant by a clerk for each 150 or 200 employees, dependent somewhat on the nature of the business.

The essential thing in any industry, of course, if real and certain profits are desired, is not to be content with "the best month" or "the past six months" as a standard, but rather to determine carefully just what is really possible and practical to achieve, and use that as a standard.

The production manager of a large rubber company recently related the incident of having planned the equipment of one department to produce 35,000 units per week as a maximum. Sales were heavy and full production was needed, but the foreman, although thoroughly familiar with the work, could not seem to deliver over 13,000 pieces per week. A careful study was made of all the conditions involved, and without any further equipment, or more employees, the production was brought up to 43,000 units per week, and as the production manager said, with a smile, "The foreman is not quite sure yet how it happened, but I notice he is keeping the production up to that figure."

Nearly every manufacturer appreciates possibilities such as these in his own plant. Why, then, is not more progress made?

Two Reasons for Lack of Progress.

There are possibly two major reasons. One of them is the continued acceptance of the traditions of the past, as being correct and final, and the other is the continued pressure of routine duties, which prevents the time or concentrated attention being given to proper analysis, and ascertaining the best means of bringing about the desired betterments. It consequently usually requires definite initiative on the part of the chief executive, the man whom the stockholders look to for dividends, the man whose comprehensive knowledge of the business, as a whole, quickly detects tendencies, which he knows that unless checked, or counter-balanced by economies elsewhere, will jeopardize the profits.

Canadian manufacturers have had their problems during the past two years in meeting conditions not previously within

their experience. Some of them have accepted conditions as inevitable, while others have given their best thought and attention to the problem of best utilizing the partly old and partly new employees to secure maximum production, and in many instances have developed cost economies and better methods in a way not thought possible, even with their old well organized force.

The new proverb, now being so intelligently recognized in Great Britain and France, "In time of war prepare for peace," has also secured equally definite recognition in Canada. With our vast natural resources and our excellent financial condition, we can well decide to put our house thoroughly in order to meet the further problems which are ahead of us, problems which, if intelligently solved, will surely result in real prosperity and continued growth and trade expansion.

LABOUR ORGANIZATION IN CANADA, 1915.

An interesting feature of the fifth annual report on Labour Organization in Canada, just issued by the Department of Labour, is a section, now introduced for the first time, showing the effect of the war on organized labor in Canada. With some aspects of the labor movement, manufacturers have never been able to see eye-to-eye, but when it comes to the splendid manner in which trade unionists and other workmen have rallied to the colors, there can be only one opinion, and that is a feeling of profound admiration for what the laboring classes have done and are doing.

Of the 1,883 local branch unions in Canada, 961 have had one or more members enlist for overseas service since the beginning of the war. The trade unions furnished 11,972 recruits and 439 reservists, making in all 12,411 members in the ranks. According to cities, Toronto ranks first with 2,137 recruits and 83 reservists; Winnipeg second, with 1,208 recruits and 25 reservists; Calgary third, with 538 recruits and 15 reservists; Montreal fourth, with 476 recruits and 38 reservists; Edmonton fifth, with 461 recruits and 13 reservists; and Vancouver sixth, with 426 recruits and 79 reservists. From the coal fields of Cape Breton came 1,000 sturdy union miners.

The war has evidently subjected Canadian trade unionism to a severe strain, the returns received for 1915 showing a loss of 120 local branches and 22,820 members. The total numerical strength of organized labor in Canada at the close of 1915 stood approximately at 143,343, made up as follows: 1,661 local branches owing allegiance to international organizations, comprising a membership of 114,722; 191 local branches of non-international bodies with a combined membership of 23,664; and 31 independent units with a reported membership of 4,957. These figures as compared with those of 1914, indicate a loss for the year 1915 of 113 local branches and 25,760 members of international organizations; a reduction of five branches of non-international bodies, but a gain of 2,729 in membership; the independent units, a loss of two, but a gain of 211 in the membership reported.

Nearly one-half of the local trade union branches is found in twenty-two cities, and these branches comprise over forty per cent. of the entire trade union membership in the Dominion. Montreal, as in 1914, stands in first place as to the number of local branches, but the proportion of branches reporting was not as good as in some other localities. Toronto, with a reduction of thirteen branches, still retains second position. The following summary gives the names of the cities, number of branches in locality, number of branches reporting membership, and the membership reported:—

CITIES	Number of Unions in Locality	Number of Unions reporting membership	Number of members reported
Montreal	126	37	10,767
Toronto	110	62	13,273
Winnipeg	80	38	5,813
Vancouver	58	39	4,557
Hamilton	55	19	2,907
Ottawa	54	32	2,658
London	43	27	1,725
Edmonton	43	28	1,954
Quebec	41	15	2,783
Calgary	37	24	1,769
Victoria	36	13	1,378
Fort William	27	13	790
Regina	27	17	844
Halifax	25	14	1,301
Saskatoon	23	14	514
Moncton	22	15	1,587
Lethbridge	22	15	1,209
St. John	21	17	1,978
St. Thomas	21	15	1,441
Brantford	21	9	383
Peterborough	21	9	335
Moosejaw	20	10	901
Totals	933	482	60,867

The report follows closely along the lines of former reports on labour organizations in Canada, the various phases of the scheme of organization which have been developed being given due consideration.

A chapter is given to a review of some of the leading building trades organizations, showing the progress and achievements of the various bodies discussed.

The report serves as a directory of trade unions for the Dominion for 1916, including as it does particulars not only of every known local trade union in Canada, but also a list of all international and non-international central organizing bodies, together with the names and addresses of the chief executive officers.

IMPORTANCE OF THE SPANISH LANGUAGE.

A letter has been received by the Department of Trade and Commerce, from Mr. H. T. Fitzgerald who has recently returned from Argentina. After describing the great natural resources of the Argentina Republic, the rapid development that is taking place, and the attractions of the magnificent city of Buenos Ayres, Mr. Fitzgerald expresses the opinion that in the Argentine Republic and throughout the Spanish countries of South America there will be great opportunities for the sale of Canadian manufactured goods, provided commercial travellers who thoroughly understand Spanish are sent to those countries. He emphasizes the importance of the study of the Spanish language in Canada. Referring to German activity Mr. Fitzgerald says:

"She sent her surplus military officers into the armies of these republics. She sent her school-masters into South American schools to instil as far as possible the greatness of Germany and its methods. She in a hundred and one ways tried not only to push herself in but to elbow out all others and thus monopolize much of the trades of the grand South American republics. It is a patent fact to-day that German prisoners in English camps and interned Germans of all kinds are studying night and day the Spanish language with a view to go to the Argentine after the war. They are thoroughly cognizant of the unlimited possibilities of that great and rich country. The county councils of England and the London Educational Department have already set to work to establish Spanish classes in the London schools especially to counteract this German propaganda."

ECONOMIC CONFERENCE OF THE ALLIES

Recommendations Approved at the Great Conference at Paris in June

IT having been felt that too much publicity cannot be given to the important recommendation approved by the representatives of the Allied Governments, who met in conference at Paris in the month of June, INDUSTRIAL CANADA believes that it will be rendering good service in reproducing the results of this historic gathering. The following statement comes to hand through the medium of the Department of Trade and Commerce, Ottawa, which received the memorandum from Mr. Harrison Watson, the Canada Trade Commissioner, in London:—

I.

The representatives of the Allied Governments have met at Paris under the presidency of M. Clémentel, Minister of Commerce, on June 14, 15, 16 and 17, 1916, for the purpose of fulfilling the mandate given to them by the Paris Conference of March 28, 1916, of giving practical expression to their solidarity of views and interests, and of proposing to their respective Governments the appropriate measures for realizing this solidarity.

II.

They declare that after forcing upon them the military contest in spite of all their efforts to avoid the conflict, the Empires of Central Europe are to-day preparing, in concert with their Allies, for a contest on the economic plane, which will not only survive the re-establishment of peace, but will at that moment attain its full scope and intensity.

III.

They cannot therefore conceal from themselves that the agreements which are being prepared for this purpose between their enemies have the obvious object of establishing the domination of the latter over the production and the markets of the whole world and of imposing on other countries an intolerable yoke.

In face of so grave a peril the representatives of the Allied Governments consider that it has become their duty, on grounds of necessary and legitimate defence, to adopt and realize from now onward all the measures requisite on the one hand to secure for themselves and for the whole of the markets of neutral countries full economic independence and respect for sound commercial practice, and on the other hand to facilitate the organization on a permanent basis of their economic alliance.

For this purpose the representatives of the Allied Governments have decided to submit for the approval of those Governments the following resolutions:—

A.

MEASURES FOR THE WAR PERIOD.

I.

The laws and regulations prohibiting trading with the enemy shall be brought into accord.

For this purpose:

A.—The Allies will prohibit their own subjects and citizens and all persons residing in their territories from carrying on any trade with:—

1. The inhabitants of enemy countries whatever their nationality.
2. Enemy subjects wherever resident.
3. Persons, firms and companies whose business is controlled wholly or partially by enemy subjects or is subject to enemy influence and whose names are included in a special list.

B.—They will prohibit the importation into their territories of all goods originating in or coming from enemy countries.

C.—They will devise means of establishing a system enabling contracts entered into with enemy subjects and injurious to national interests to be concelled unconditionally.

II.

Business undertakings owned or operated by enemy subjects in the territories of the Allies will all be sequestrated or placed under control; measures will be taken for the purpose of winding up some of these undertakings and of realizing their assets, the proceeds of such realization remaining sequestrated or under control.

III.

In addition to the export prohibitions which are necessitated by the internal situation of each of the allied countries, the Allies will complete the measures already taken for the restriction of enemy supplies, both in the mother countries and in the Dominions, Colonies and Protectorates:—

1. By unifying the lists of contraband and of export prohibition, and particularly by prohibiting the export of all commodities declared absolute or conditional contraband;
2. By making the grant of licenses for export to neutral countries from which export to enemy territories might take place conditional upon the existence in such countries of control organizations approved by the Allies; or, in the absence of such organizations, upon special guarantees such as the limitation of the quantities exported, supervision by allied consular officers, etc.

B.

TRANSITORY MEASURES FOR THE PERIOD OF COMMERCIAL, INDUSTRIAL, AGRICULTURAL AND MARITIME RECONSTRUCTION OF THE ALLIED COUNTRIES.

I.

The Allies declare their common determination to ensure the re-establishment of the countries suffering from acts of destruction, spoliation and unjust requisition, and decide to join in devising means to secure the restoration to these countries, as a prior claim, of their raw materials, industrial and agricultural plant, stock and mercantile fleet, or to assist them to re-equip themselves in these respects.

II.

Whereas the war has put an end to all the treaties of commerce between the Allies and the Enemy Powers, and whereas it is of essential importance that, during the period of economic reconstruction which will follow the cessation of hostilities, the liberty of none of the Allies should be hampered by any claim put forward by the Enemy Powers to most-favoured-nation treatment, the Allies agree that the benefit of this treatment shall not be granted to those powers during a number of years to be fixed by mutual agreement among themselves.

During this number of years the Allies undertake to assure to each other so far as possible compensatory outlets for trade in case consequences detrimental to their commerce result from the application of the undertaking referred to in the preceding paragraph.

III.

The Allies declare themselves agreed to conserve for the Allied countries, before all others, their natural resources during the whole period of commercial, industrial, agricultural and maritime reconstruction, and for this purpose they undertake to establish special arrangements to facilitate the interchange of these resources.

IV.

In order to defend their commerce, their industry, their agriculture and their navigation against economic aggression resulting from dumping or any other mode of unfair competition the Allies decide to fix by agreement a period of time during which the commerce of the enemy powers shall be submitted to special treatment and the goods originating in their countries shall be subjected either to prohibitions or to a special régime of an effective character.

The Allies will determine by agreement through diplomatic channels the special conditions to be imposed during the above-mentioned period on the ships of the enemy powers.

V.

The Allies will devise the measures to be taken jointly or severally for preventing enemy subjects from exercising, in their territories, certain industries or professions which concern national defence or economic independence.

C.

PERMANENT MEASURES OF MUTUAL ASSISTANCE AND COLLABORATION AMONG THE ALLIES.

I.

The Allies decide to take the necessary steps without delay to render themselves independent of the enemy countries in so far as regards the raw materials and manufactured articles essential to the normal development of their economic activities.

These steps should be directed to assuring the independence of the Allies not only so far as concerns their sources of supply, but also as regards their financial, commercial and maritime organization.

The Allies will adopt the methods which seem to them most suitable for the carrying out of their resolution, according to the nature of the commodities and having regard to the principles which govern their economic policy.

They may, for example, have recourse either to enterprises subsidized, directed or controlled by the Governments themselves, or to the grant of financial assistance for the encouragement of scientific and technical research and the development of national industries and resources; to customs duties or prohibitions of a temporary or permanent character; or to a combination of these different methods.

Whatever may be the methods adopted, the object aimed at by the Allies is to increase production within their territories as a whole to a sufficient extent to enable them to maintain and develop their economic position and independence in relation to enemy countries.

II.

In order to permit the interchange of their products, the Allies undertake to adopt measures for facilitating their mutual trade relations both by the establishment of direct and rapid land and sea transport servicecs at low rates, and by the extension and improvement of postal, telegraphic and other communications.

III.

The Allies undertake to convene a meeting of technical delegates to draw up measures for the assimilation, so far as may be possible, of their laws governing patients, indications of origin and trade marks.

In regard to patents, trade marks and literary and artistic copyright which have come into existence during the war in enemy countries, the Allies will adopt, so far as possible, an identical procedure, to be applied as soon as hostilities cease.

This procedure will be elaborated by the technical delegates of the Allies.

D.

Whereas for the purpose of their common defence against the enemy the Allied Powers have agreed to adopt a common economic policy, on the lines laid down in the Resolutions which have been passed, and whereas it is recognized that the effectiveness of this policy depends absolutely upon these resolutions being put into operation forthwith, the representatives of the Allied Governments undertake to recommend their respective Governments to take without delay all the measures, whether temporary or permanent, requisite for giving full and cocmplete effect of this policy forthwith, and to communicate to each other the decisions arrived at to attain that object.



PROGRESS OF AN IMPORTANT ENGINEERING UNDERTAKING IN TORONTO

The Viaduct across the Don Valley, which will connect Bloor Street and Danforth Avenue and complete a great East and West thoroughfare, as it appeared at the beginning of August.

—Photo by British and Colonial Press Service.

TARIFF

By J. R. K. BRISTOL

To Manufacturers Not Engaged in Export Business, But Who May Contemplate Such Developments:

Are you aware that you have the privilege of practically duty free materials for manufacturing for export? Full information on this matter can be obtained from the Customs Department, Ottawa; or from the Manager, The Tariff Department, Canadian Manufacturers Association, Toronto.

Board of Customs Decisions.

FILE No. 80469. Delphos printing press, Model A, declared to be dutiable under tariff item 442. Under item 442 the tariff rate is 10 per cent. ad. valorem, subject to the additional war tariff of 7½ per cent. ad. valorem.

File No. 69687. Coloured silk yarn, per sample, declared to be entitled to entry under tariff items 577 and 740, when imported for use as specified in said items.

File No. 68014. Bisleri bitters, per sample, declared to be dutiable under tariff item 156. This is the same rate as applies on Angostura bitters.

File No. 89560. Violet Ray High Frequency Generators declared to be dutiable under item 453. By the provisions of 453 the general tariff rate is 27½ per cent. ad. valorem. There is also a war tariff of 7½ per cent. ad. valorem.

File No. 90298. Book entitled "Farmer's Veterinary Guide and Atlas," per sample, declared to be entitled to entry under item 172. Under item 172 free customs entry is provided for.

File No. 86279. Matrices required to produce one page in colours, declared that each separate matrice imported is subject to duty on its own measurement.

File No. 68355. Locomotive axle forgings, rough turned, declared to be dutiable under item 392.

File No. 84182. Cooked corn grits, per sample, found to be not fit for human food in condition imported, declared to be dutiable under item 711. Under item 711 the duty payable is 17½ per cent. general tariff. These importations are also subject to the war tariff of 7½ per cent. ad. valorem.

File No. 88395. Polishing cloth, per sample, marked "Dazzle," declared to be dutiable under item 562. By the provisions of 562 the general tariff rate is 30 per cent. ad. valorem. This item is also subject to the war tariff of 7½ per cent. ad. valorem.

Departmental Rulings.

File No. 88144. With respect to importations under tariff item 470, free entry may be allowed under the above item without stating the name of the ship or vessel for which the material is to be used. It is not necessary that oath form four should be subscribed to in such case.

File No. 88820. Tin cans containing oysters in bulk: such cans closed with wedge-shaped cover are subject to duty on importation, as they are not destroyed in order to get at the contents.

File No. 89021. Christmas stockings, containing miscellaneous articles, such as confectionery, toys, manufactures of paper, etc., shall be rated for duty at the rate applying to the component articles of chief value therein.

File No. 68998. Lacquers described, as follows, have been before the Department for ruling as to tariff status and are found to be manufactured from gum resin dissolved in denatured amyl alcohol or fusel oil, and are therefore dutiable under the provisions of tariff items 248, viz.:

> Gold lacquer special No. 69, Egyptian brush brass lacquer, Egyptian invisible lacquer, White dip lacquer, Egyptian white enamel No. 2, Egyptian brilliant lacquer No. 1, Helios dip lacquer, Lastina lacquer No. 10, Obelisk lacquer No. 4.

The thinners in practically every case were found to be denatured amyl alcohol, and therefore dutiable under the provisions of tariff item 156.

Russia.

By a decree of the Minister of Finance of Russia the free importation (free of Customs duty) into the Empire via the Petrograd Port Custom House is authorized of safety matches to the amount of fifty million boxes containing not more than seventy-five matches each. It is conditional that the authority lapses after the 1-14 January, 1917.

A decree issued by the Minister of Finance of Russia in concurrence with the Minister of Commerce has just recently been published, laying down regulations governing the duty free importation into Russia of gold mining dredges and excavators. The regulation is on file in the Tariff Department of the Canadian Manufacturers' Association and may be referred to by those interested.

Greece.

The increase of the Greek tariff rates of duty by 10 per cent., which was proposed by Article 1 of the Bill recently introduced in the Greek Chamber and provisionally enforced, has now been suppressed, and it is officially announced that the sums already paid to the Greek Customs in respect of this increase will be refunded.

Jamaica.

By recent changes in the Customs tariff of Jamaica provision is made for a temporary increase in the import duties on certain articles and for the removal of certain articles *from* the free list. The law is to remain in operation, unless previously repealed, until the 31st March, 1917. Particulars of these Jamaican tariff increases are on file in the Tariff Department of the Canadian Manufacturers' Association and available to those interested.

France.

The Minister of Finance of France has decided that as a temporary measure and until the cessation of the war steel in bars of a value of or exceeding 75 francs per 100 kilogrammes is to be regarded for tariff purposes as "*acier fin pour outils*" (Tariff No. 207 *ter*) dutiable under the general

tariffs at the rate of 22.50 francs, and under the "Minimum" tariff, at the rate of 15 francs, per 100 kilogs.

(*Note.*—The Tariff classification of steel in bars as "common steel" or as "fine steel for tools" depends on the value of the steel. Hitherto all steel in bars of a value of or exceeding 50 francs per 100 kilogs. has been regarded as "fine steel for tools." Now, however, steel will be admitted at the lower rate (5 france per 100 kilogs.) as common steel, provided that its value is less than 75 francs per 100 kilogs. The value of steel declared for Customs purposes as "common" must be specified in the Customs declaration and supported by the production of the "facture d'origine" visé by a French Consul. The value to be declared is that of the goods at the place where and time when they are presented to the French Customs for clearance; this value includes, consequently, all the costs which together make up the market value of the goods on their arrival in France (excluding import duty).

"The French Customs control the declarations by an examination of the appearance of the metal, the shape and dimensions of the bars, the marks thereon, and the composition of the consignments.)"

75 france per 100 kilogrammes equals $6.57 per 100 lbs.

Republic of Colombia.

(From British *Board of Trade Journal.*)

The Colombian *Diario Official*, for the 20th January, contains a resolution of the Minister of Hacienda, dated the 29th December, 1915, which notifies that goods d spatched to Colombia must be declared in the Consular invoices in the terms of the nomenclature of the Colombian Customs Tariff. Firms exporting goods to Colombia should therefore obtaain from the Colombian importers or their agents the information necessary to enable them to declare the goods in accordance with the Tariff nomenclature.

SHIFTING THE TROUBLE.

"One manufacturer has solved the strike problem," says the *Furniture Worker*. "His men, although earning big wages, had gone out on some trivial grievance. He posted a list of the strikers outside the plant and opposite each name was the amount of money earned by each man. The strikers' wives inspected the list and then real trouble began."

Just what the trouble was, the *Furniture Worker* fails to state, but no doubt many of the women learned for the first time that their husbands had been receiving larger wages than they had reported, and we suppose all interest in the strike was lost in family rows and explanations.—*Dodge Idea.*

BREAKING IN THE NEW MAN.

When a new man begins work in an office or a department he is often left to shift for himself without an outline of his duties or an introduction to those around him, says a writer in *The Dodge Idea.* It is good to hear what a young man told me once:

"When I began here," he said, "the manager of this department talked things over with me for nearly an hour. He told me the names of all the officers of the firm, and what they did, the names of all the heads of the departments I would come in contact with, the names of the other people here in the office, the names of the leading houses we did business with, and gave me a good, general idea of the work of the whole office, and special outline of my duties and possibilities. Then he took me around and introduced me to many of the people. The result was that I quickly got my bearings, felt at home from the first, and soon settled down to hard work. In my previous position with another firm my experience was different. There were no introductions, and no outline, and no general information. My first three months were practically spent learning what the manager could have told me in an hour if he had taken the trouble to do it. The work here is twice as complicated as it was there, but I got the general plan of it well in mind the first day."

Every manager should, for the moment, put himself in the place of the new employee and realize what a confused sense he must have of a large and unfamiliar business, and how easily that confusion could be taken away by a good talk about the work in general.



THE LATE JOHN HENDRY

President of the Canadian Manufacturers Association, 1909-10, whose death occurred in Vancouver on July 17th

In the death of John Hendry, British Columbia has lost one of its most prominent captains of industry. Associated for over forty years with the lumbering industry of the Coast Province, he did much in that time to promote the interests of that important branch of Canadian manufacturing. He was also closely identified with various other B. C. enterprises, and was never found wanting in the loyal support of all public movements on the coast. In 1908-09, he was called on to take up the duties of President of the Canadian Manufacturers' Association, performing the work of that office with diligence and acceptance. He was seventy-three years of age at the time of his death.

INSVRANCE

Canadian Fire Losses.

ACCORDING to estimates compiled by *The Monetary Times*, Canada's fire loss during the month of June amounted to $494,557, as compared with a loss of $1,850,205 during the month of May and $773,269 for June of last year.

The Conservation Commission has recently issued a bulletin, drawing attention to the greatly increased fire losses of the first five months of this year as compared with the corresponding period of 1915. The Bulletin continues:

"In war time and while many interests are urging thrift and economy, the Canadian people are burning up their created resources at a much greater rate this year than last. Canada has need of all her financial resources. She is borrowing money to carry on the war, and is paying five per cent. interest thereon. The additional fire loss of 1916 would therefore pay the interest charge on the recent war loan of $100,000,000, and would pay $2,200,000 of the principal. Canada's average annual fire loss, of over $23,000,000 would pay five per cent. interest on approximately half a billion dollars. Our fire loss is, however, something for which we are receiving no value, either financial or patriotic; it is simply a tax, due in great part to carelessness, which Canadians appear willing to pay, and which they, as a whole, are doing little to avert."

Early Fire Prevention Legislation.

Owing to frequent outbreaks of fire in the year 1708, the Lord Mayor and Common Council of the City of London issued the following solemn warning: "Whereas divers fires often happen by the negligence of servants, be it therefore enacted, by the authority aforesaid, that if any menial or other servant or servants through negligence or carelessness shall fire, or cause to be fired, any dwell-house, or out-house or houses such servant or servants being thereof lawfully convicted by the oath of one or more of Her Majesty's Justices of the Peace, shall forfeit and pay the sum of one hundred pounds into the church-wardens of such parish where the fire shall happen, to be distributed among the sufferers of such fire, in such proportions as the said church-wardens shall deem just; and in case of default or refusal to pay the same immediately after conviction, the same being lawfully demanded by the said church-wardens, that then, and in such case, each servant or servants shall by warrant under the hands of two or more Justices of the Peace be committed to some workhouse or House of Correction as the said Justices shall deem fit, for the space of eighteen months, there to be kept at hard labor."

For the more effectual preventing of fires in the city and suburbs, it was enacted by Parliament: "That the church-wardens of each parish be empowered, at the charge of their respective parishes, to fix upon the several main water pipes in the streets stop-blocks with a leathern pipe and socket to screw upon the fire cocks, also to provide a large hand engine with a leathern pipe and socket to screw upon the fire cock. And for the future all party walls to be of brick or stone, except the house on London Bridge."

Inter-Insurance Exchange Refuses to Pay.

On the 4th of April, 1915, a fire occurred on property of the Forest Mills Timber Company, involving insurance to the total of $233,000, of which $170,500 was in the Lumbermen's Indemnity Exchange of Seattle, the balance being in stock companies. The regular insurance companies have long since paid their share of the loss. The Indemnity Exchange, however, set a Burns detective to work on the report that the fire was of incendiary origin. British Columbia Government officials conducted two separate investigations, one at the request of the Exchange and another at the request of the assured. Each time they declared that there was not the slightest evidence to show that the timber company was in any way responsible for the fire.

Unable to obtain any satisfaction from the Indemnity Exchange, the assured filed suit in the British Columbia courts against the Adams River Lumber Company, the first company on the list of the Exchange members. The following is a portion of the defence made by the Adams River Lumber Company, Limited:

"The defendant says that under its charter it had not the power to enter into any association for carrying on the business of fire insurance, and that it was *ultra vires* of the defendant to enter into or become a member of the association known as the Lumbermen's Indemnity Exchange, and to become or make itself liable under the said policy, policies or otherwise, and it is not bound by any contract whatsoever of the Lumbermen's Indemnity Exchange.

"The defendant further says that the plaintiff, Forest Mills of British Columbia, Limited, has no power to engage in the business of fire insurance, or to enter into or become a member of the Lumbermen's Indemnity Exchange, or to become a contributory thereunder, and that the policies or contracts of insurance, and each of them, are *ultra vires* of the said plaintiff, and no rights can arise thereunder; and in the further alternative that the Lumbermen's Indemnity Exchange being an association of persons, firms and corporations, mutually insuring each other, the said policies of insurance and each of them and any and all contracts or obligations arising therefrom are, insofar as the said plaintiff is concerned, null and void, and of no effect for want of mutuality, and by reasons of the incapacity of the said plaintiff to enter into such an association of mutual insurers, and no rights whatsoever can arise thereunder or by reason of the said policies or any of them."

The Lumbermen's Indemnity Exchange has recently published a defence of its attitude regarding the non-payment of this claim, stating that the claim is excessive, that the circumstances of the fire were extremely suspicious and that, while the incendiary origin of the fire is admitted, no attempt has been made to discover the incendiary.

No mention is made of the fact that the stock companies paid up their share of the loss promptly.

The Exchange also says: "It is well known to the Canadian members of the Exchange that it is *ultra vires* for a corporation in the Dominion to enter into inter-insurance with it, *except* as a gentleman's agreement."

The writer of this statement must surely be lacking in a sense of humor when he affirms so seriously that the Exchange's Canadian policies are only "gentlemen's agreements" and intimates that therefore the Exchange is under no obligation to adhere to them. It would be interesting to know whether, in view of their own extraordinary defence, the Adams River Lumber Company have maintained in force their own policies in the Lumbermen's Indemnity Exchange.

TRANSPORTATION

By J. E. WALSH

TRANSCONTINENTAL COMMODITY RATES.

New Tariff Effective September 20th, 1916.

THE Chairman of the Canadian Freight Association, Mr. George C. Ransom, is sending interested shippers and all railway agents in Eastern Canada a new tariff issued by him on behalf of the railways in that territory known as "WEST BOUND TARIFF No. 1" applying on VARIOUS COMMODITIES to British Columbia Pacific Coast points. It goes into effect on September 20th, 1916, and will take the place of the present tariff, C.P.R. No. E. 2632, C.N.R. No. E. 706, G.T.R. No. C.N. 154, and I.C.R. No. C.X. 65. The more important changes are described as follows:—

Rule 5—Page 50.

MIXED CARLOADS.—Rates named in this tariff are specific. The only commodities which can be shipped in mixed carloads (unless otherwise specifically provided herein) are those included in each separately numbered item. Rule 2, Canadian Freight Classification, will not apply.

This Rule cancels the application of Rule 2 of the Canadian Classification, which at present allows those articles which appear in tariff C.P.R. No. E. 2632, C.N.R. No. E 706, G.T.R. No. C.N. 154, I.C.R. No. C.X. 65, to be shipped in mixed carloads at the highest rate and highest minimum weight of any article in the shipment, providing all the articles appear under one heading or Trade List in the Canadian Freight Classification. These headings or Trade Lists are shown in black face type, i.e., "HARDWARE," "IRON AND STEEL," etc.

Exceptions to the Above.

As mixed carload arrangements are absolutely necessary to certain lines of goods of a more or less analagous character, such as iron and steel, etc., provision has been made by "notes" which appear in certain items providing for mixtures. These have been arranged following a number of meetings with the railways after consultation with interested members, and an examination of the tariff will show that to a large extent provision has been made for the continuance of the conditions under which the traffic now moves.

Rule 8, Page 51.

PART CARLOADS.—Rule 3 of Canadian Freight Classification No. 16 will not apply in connection with any items covered in this tariff.

This rule cancels the application of Rule 3, Canadian Freight Classification which at present allows the shipping of a "part carload" or "follow lot" at the carload rate actual weight, providing the first car is loaded to the minimum weight, also that the minimum weight is 20,000 lbs., or more, and the articles shipped are rated 5th class or higher.

Important.

Interested members who have not already done so should secure a copy of the new tariff without delay with a view of familiarizing their Traffic and Shipping Departments with the different items, arrangements, and rules before the effective date thereof. Any points which are not clear will be promptly explained on application to this Department.

PROPOSED CANADIAN FREIGHT CLASSIFICATION NO. 17.

The railways, through the Canadian Freight Association, have submitted to the Board of Railway Commissioners the revision of the Canadian Freight Classification which has been on foot for some years. The changes are so numerous that it would be impossible to enumerate then in this article. In fact, the Chairman of the Canadian Freight Association states "It has been found impracticable to show prefixes indicating the changes as directed by the Board of Railway Commissioners in general orders issued from time to time in regard to changes in classification."

Now the Railway Act says: "The Company may from time to time, with the approval of the Board, and shall, when so directed by the Board, place any goods specified by the Board in any stated class, or remove them from any one class to any other higher or lower class. . . Provided that no goods shall be removed from a lower to a higher class until such notice as the Board determines shall be given in the *Canada Gazette*."

Up to a short time ago the Board required the railways to publish the changes in full in the CANADA GAZETTE. This was recently modified by the Board, and all that they are now required to do is to publish the following:—

> "Notice is hereby given that the Canadian Freight Association did on the ..... day of ..... submit to the Board of Railway Commissioners for Canada for its approval Canadian Freight Classification No. .... or Supplement No. .... to Canadian Freight Classification No....."

Whilst at the present time it is not necessary to publish in the CANADA GAZETTE the actual change in the ratings, they are required to show in the proof of what is filed under the heading of "additions" articles not previously classified, also new rules or regulations which it is proposed to add to the classification. Under the reading of "changes" they must show a proposed increase or reduced ratings or changes in the existing rules or regulations, and in a parallel column those previously approved by the Board. In addition to this they must submit to the Board with their application the reasons, fully stated in manuscript, for proposed changes involving increased transportation charges. At the same time copies of the changes must be filed with this Association and other bodies throughout the country.

As hereinbefore stated, the Companies stated that it was found impracticable to comply with the Board's directions for the reason that a change in the carload minimum weight or rating may result in an advance between points East of Port Arthur, Ontario, and at the same time, owing to the abolition of "distinctive headings" bring about a reduction in the charge to points West of Port Arthur, and between

points West thereof. Another reason for this is the introduction of the following rule:—

"Any individual article in this classification not provided with a carload rating will be charged at the next lower class at actual gross weight subject to the following minimum weights:

When classified L.C.L. 1st class or higher—20,000 lbs.
When classified L.C.L. 2nd class or higher—24,000 lbs."

Then, again, changes proposed in the rules and conditions of carriage are so radical, and in some instances so seriously affect the present relationship between the carriers and the public, that it would be difficult to show the probable effect thereof. The failure to furnish specific information as to the probable effect of the changes proposed in the rules has caused the Board of Railway Commissioners to make the following order, following the Judgment by the Chief Commissioner:

"It is ordered that the Railway Companies, subject to the jurisdiction of the Board furnish the Board and the bodies enumerated in the General Order of the Board No. 153, dated November 4th, 1915, with a statement showing all the changes made in the Rules of the said proposed Canadian Freight Classification No. 17, the grounds upon which they are sought to be justified, and the results such changes would make on traffic in Eastern and Western Canada respectively."

The Chairman in the Judgment says:—

"Not only do the changes in the Classification ratings appear to be radical, but substantial changes are also made in the Rules.

"Owing to the fact that the new Classification contemplates a uniform classification for the whole country, and that different classifications have in the past obtained, the effect of the changes, both in the Classification and Rules, differ in the different districts, with the result that what would be a restriction of the mixing privileges in one means a mere extended right to mix carload lots in the other.

"It is extremely difficult as the matter now stands for the Board, and it would seem to be impossible for the shippers to properly consider the effect of the new Rules and the new Classification without definite information as to all the changes sought, the injustice or difficulty suffered under the former regulations, and, speaking generally, the effect of the changes.

This information the railways either have or should have.

"An Order should go directing the Railway Companies to file with the Board and serve on the parties a statement showing, in the first instance, all changes made in the Rules and the grounds on which the changes are sought to be justified, and showing the results the changes would make on traffic in Eastern and Western Canada respectively."

In view of the above, although the Department has already analysed the changes in the rules and the possible effect, it is not thought advisable to notify members of the changes, as it is the intention to do later on, until the Board's Order has been complied with. As soon as the information comes to hand, and it is checked with our analysis of the changes, advice thereof will be distributed without delay. It might, however, be well to mention a few of the changes proposed:

Under proposed Rule No. 4, the carriers are not obligated to furnish equipment exceeding the following dimensions:

Flat or gondola cars 36 ft. 10 in. in length, platform measurement. Closed cars 36 ft. 6 in. in length and 8 ft. in height, inside measurement.

This, of course, means that the carriers propose to relieve themselves of their obligations under the Railway Act to furnish adequate and suitable accommodation for the carrying of all traffic offered. Whilst companies propose to reserve the right to refuse to furnish cars exceeding the above dimensions, a table of graduated minimum weights is proposed for cars in excess of 36 ft. 6 in. in length, and exceeding 8 ft. in height.

The rule in regard to articles, which, on account of length require two or more cars, is most drastic, both in respect to carloads and less than carloads. As regards the latter, it means approximately an increase of from two to three hundred per cent.

A new rule is proposed requiring shippers to load into or on cars, and to unload from cars, all freight carried at carload ratings. If, in the instance of a shipment tendered in less than carload lots, but upon which the carload rate and minimum is applied, as provided, such service is performed by carrier's agents, a charge of 1½c. per hundred pounds will be made for loading, and a like charge for unloading. At the present time all freight, fifth class and higher, both carloads and less, is loaded and unloaded by the carriers.

Another new rule suggested is that freight loaded by shipper, when not checked by carrier, will be receipted for "Shipper's Load and Count." It will thus be seen that it is proposed to require shippers and receivers to load and unload their merchandise traffic, and at the same time refuse to give a clear receipt for goods shipped in carloads.

Another rule provides that the ratings in the proposed classification do not obligate the carriers to receive freight liable to impregnate or otherwise damage equipment or other freight.

Regarding mixed carloads of different articles: It is proposed to confine the mixture to different articles provided with carload ratings of the same class shipped from one station in one car on one day by one shipper for delivery to one consignee at one destination in carloads. The only exception to this is that the same article, which, on account of shipping conditions or valuation, is provided with a different carload rating, may be shipped in a mixed carload at the highest carload rate and highest minimum weight provided therefor.

It will thus be seen that it is suggested that all goods rated fifth class may be shipped in mixed carloads regardless of the nature thereof, and the same in regard to fourth or any of the other classes.

The present system of advancing cartage charges is to be done away with. The new rule says: "No charges of any description shall be advanced to shippers, owners, consignees or agents thereof; not to draymen or warehousemen for shippers, owners, consignees or agents thereof."

In addition to the above, hundreds of changes are proposed in ratings and conditions of carriage including increases in carload minimum weights, advances in carload ratings, more onerous conditions in regard to containers.

Increase in Eastern Freight Rates.

The judgment in the Eastern Rates Case was published some time ago. On receipt of it a circular was sent by the Transportation Department to the members suggesting that they secure a copy from the Chief Accountant, Department of Public Printing and Stationery, Ottawa.

Briefly, the railways asked for permission to increase class rates as follows:—

(*a*) Between all points in the Provinces of Ontario, East of Port Arthur, and Quebec as far East as Quebec City, Levis and Megantic, when movement is over twenty-five miles 2c. per hundred pounds, first class, and 1c. fifth class, other classes to be scaled proportionately.

(*b*) Arbitraries, Montreal to points east of Megantic and Levis to St. John, Halifax and Sydney, 8c. per hundred pounds first class and 4c. fifth class, other classes to be scaled proportionately.

(*c*) Between points west of Montreal and St. John, Halifax and Sydney, 10c. per hundred pounds first class and 5c. fifth class, other classes to be scaled proportionately.

The increases were allowed in the territory described in Section (*a*), subject to certain changes in the mileage groups:

81 to 95 miles is changed to read 81 to 100 miles.
96 to 110 miles is changed to read 101 to 120 miles.
111 to 140 miles is changed to read 121 to 140 miles.

This means that there will be no increase in rates for distances 96 to 100 miles and 111 to 120 miles on traffic moving under class rates, as per schedule (*a*); also to points on the C.P.R. and C.N.R. north of Parry Sound to Sudbury.

Whilst the application was for an increase of 8c. first class and 4c. fifth class in the arbitraries, Montreal to points east to Megantic and Levis, the Board only allowed half that amount, namely, 4c. and 2c. respectively.

In the territory covered by Section (*c*) the increases allowed are 6c. and 3c. The application was for 10c. and 5c.

In regard to commodity rates: In nearly all cases increases have been allowed, there being few exceptions. In some cases, however, the whole increase asked for has not been granted. For instance, a flat increase of 10c. per ton was asked on coal. The increase allowed was 10 per cent., with a maximum of 10c. per ton.

It is expected that the new tariffs giving effect to the Board's Order will become effective about September 1st. The Department is in a position to advise members of the increases and the probable effect thereof.

Increase Held to be Justified.

The Board, in arriving at this conclusion that the Railways in Eastern Canada are entitled to more revenue, accepted the figures of the Grand Trunk. They came to the conclusion that the time was opportune for such an increase, as indicated at page 154 of the Judgment, as follows:—

> "In general the case for increase has been made out. Apart from the merits of the application, having regard to the situation in Eastern Canada alone, the general Railway situation in Canada demands that Eastern Rates should be increased when the different industries can fairly and reasonably bear such increases. While, as has been set out at greater length in the Western Rates Case, differences of condition do exist between Eastern and Western Canada, and while western freight rates have already materially been reduced, the general schedule there obtaining is still higher, notwithstanding the fact that certain western rates that may be instanced are lower. There is no doubt but that the Act requires and the general public interest of the country as a whole demands, that, if practicable, eastern rates should be advanced so that the different schedules may more nearly approach a parity.'
>
> "I am aware that an absolute parity is impracticable, but, as conditions become similar, a reasonable parity ought to be obtained. The increases which I think should now be made are increases which will not, or at any rate should not, stop traffic, the effect of which would be merely to add to the general railway burden. . . The increases made are justifiable entirely on the mere fact of the increase in Grand Trunk expenses and having regard to the traffic of normal years."

With regard to the taking of large sums of money from the parent (Grand Trunk) Company to make up deficits on the lines either owned or leased in the United States, the Board quotes the justification offered by Mr. Tilley on behalf of the Grand Trunk, that the Chicago connection was a statutory obligation imposed upon the Railway Company under an agreement with the Canadian Government made in 1879. It was further stated at the different hearings, that the parent Company received a large tonnage from their American connections, and, therefore, there was justification for the taking of the moneys from the parent Company to make up these deficits. The Judgment intimates that whilst the Government statistics confirm the conclusion contained in the Company's reports, the qualification must, however, be made and the fact emphasized that while the Grand Trunk proper does benefit from the business it obtains from its American subsidiary lines, that these lines in turn benefit from the connection with the parent Company. The whole tonnage does not originate in Chicago or on the Chicago and other western connections. Whilst the latter undoubtedly supports the position taken by us at the hearings, no conclusion is come to by the Board.

Judgment Based on Grand Trunk Figures.

Commissioner McLean, who concurs in the Judgment, says:—

> "I agree in the recommendations as to the increased rates. The Grand Trunk Railway is an old-established railway whose business is primarily concerned with Ontario and Quebec. It is not subject to the charge, which a newly-constructed road would be, that its revenues are in a development condition, and are, therefore, not characteristic. The analysis given of the increasing costs of operation as well as of the financial and service requirements of the Grand Trunk justifies the recommendations made. It being held that the rates involved are such as are needed by and may reasonably be allowed on the Grand Trunk, it follows, on account of the inter-relations of railway business, that they must be allowed generally in Eastern Canada.

Effect on Manufacturers.

As to the effect of the Judgment on the Canadian Manufacturers, the decision of the Board means an advance in the rates on raw materials in a number of cases, and on manufactured goods. The advance on the latter to points in the Maritime Provinces is a substantial one. On the other hand, rates of our competitors in the United States have not been disturbed. The present relationship of rates has not been satisfactory to Canadian manufacturers, particularly west of Toronto. Their competitors on the other side, owing largely to the different classifications, are in a position to deliver goods to many points in Ontario, Quebec, and the Maritime Provinces at considerably lower rates than applying from Canadian points. The Railway Commission in the International Rates Case, to some extent, rectified this. The present Judgment has the effect of reinstating what was formerly complained of.

The position of the Association was announced at one of the first hearings in the application. With regard to raw materials, it was stated, in so far as the proposition to increase freight rates on coal, raw materials, and other manufacturing necessities is concerned, that this would bear very hard at present on manufacturers, many of whom have been loyally keeping their plants running as far as possible, even at an actual loss, in order to protect their workmen and keep alive their organizations. It was further intimated that

the depressed conditions, although temporary, were probably magnified to appear as those prevailing in normal times. In conclusion, it was stated: "There is no disposition whatever on the part of the Canadian Manufacturers' Association to be unfair or unjust to the railways of the country, or to get from under any burdens which should properly be placed upon their shoulders." After suggesting that there should be a further study and survey of this intricate question, it was then stated: "If the results of such a study and survey points convincingly to the fact that the real remedy for the troubles of the railways is higher freight rates, notwithstanding that the carriers have other sources of revenue, and that this is the proper solution of the question as affecting all parties concerned, the manufacturers will not object to bearing their share of the burden, properly adjusted. This, however, should be made clear to the Board."

With regard to the increased cost of operation, the carriers are in no different position to that of the manufacturers. They are, however, all subject to the law of increasing returns, particularly the carriers.

Should Have Reduced Expenses.

To sum up, the representatives of the Grand Trunk, at the outset, said that they needed more money, and they presented certain statements showing that there had been material increases in operating expenses. To just what extent these statements have been analysed the Judgment does not state, neither does it say that the other activities of the Company have been investigated.

In the "Five Per Cent. Advance Case" the Interstate Commerce Commission gave some attention to passenger and other traffic. Whether this has been looked into or not is not stated. It may well be "that competition between the railways," not called for by the public, is responsible to a very considerable extent for increased operating expenses in some of the other Departments. If that is true, then it is only reasonable to suggest that when a demand is made for more money upon the ground that operating expenses in general have been increased, all the various branches should be looked into.

Suggestions to Express Shippers.

Under the caption, "Poorly Packed Shipments Mean Dissatisfied Customers," eight express companies operating in Canada and the United States have issued, in combination, a small leaflet containing fourteen suggestions to express shippers. These are well worth the attention of firms who make use of express service in their business. The fourteen suggestions are as follows:—

1. Pack GLASS and fragile articles in wooden boxes or strong corrugated paper cartons, using plenty of excelsior or similar packing and marking "GLASS."
2. Obliterate old marks on boxes or wrappings—they frequently send packages astray.
3. Heavy packages of merchandise should not be wrapped in single thickness of thin paper and tied with light string, because the most careful handling will not then prevent delivery in torn and damaged condition.
4. Put your name and address on outside of package under the word "From." Put your name and address, and name and address of consignee inside the package. If outside mark is lost or destroyed this will prevent delay in delivery.
5. Avoid the use of tags if condition of package will permit marking with ink.
6. Castings and similar shipments should be marked with two or more strong tags attached by wire.
7. Raw furs or skins, if in hand-made bales, should be securely stitched in burlap or bag, and marked on a smooth wooden strip sewed flat on the bale. The oil in the skins destroys ordinary marki-
8. If shipment is C.O.D. (Bill with Goods) mark plainly "C.O.D. $....." Unless specific instructions to the contrary are given by the shipper, the charge for collecting and remitting the money will be collected from consignee. Prepare a C.O.D. envelope to accompany the shipment.

Shipper's name and address must be plainly shown on shipment and on C.O.D. envelope. Write same information in receipt.

9. Write the value of shipment in proper space in the receipt. If the shipper does not declare and enter the value in the receipt the liability of the Company is limited to $50. The charge is the same when value is declared at $50 or less; an extra charge is made when the value declared exceeds $50.
10. Always show correct street and number for large cities.
11. Because of similar town names, the County should be shown. Abbreviations are misleading—spell out the names of Provinces and States.
12. Send Money and Jewelry in sealed packages through Money Department. Never in unsealed packages.
13. If charges are Prepaid, mark the shipment plainly "PREPAID." If package is marked with a tag and also on package, or on more than one side of package, write the word "PREPAID" wherever the address appears, then whichever mark is looked at the Prepaid notation will show and prevent collecting charges twice.
14. UNITED STATES BUSINESS.—If shipment is destined to the United States, Owner's or Agent's Export Entry in duplicate, in form as ordered by the Department of Customs, Canada, must be filled in and forwarded with the shipment. Duplicate Certified invoice must also be furnished by the shipper. If the value exceeds $100, shipper must also furnish United States Consular invoices. Shipments of meat of all kinds must also be accompanied by Meat Inspection Certificates in triplicate (Dept. of Agriculture, Canada, H. of A. form 36). Mark the value plainly on outside of all shipments.

Express Companies generally furnish necessary blank forms on request.

A Vice-Presidential Contribution.

The manager of the Transportation Department of the Association, who is sometimes at a loss for interesting material wherewith to fill his allotted space in each month's issue of INDUSTRIAL CANADA, was much gratified the other day to receive a contribution from no less a person than the new First Vice-President of the Association, Mr. Parsons. Mr. Parsons wrote Mr. Walsh as follows:—

> Dear Mr. Walsh:—
>
> What I said at the Annual Meeting of my four years experience as Chairman of the Transportation Committee, and the fact that at the end of that period I was quite sure that I didn't know anything about freight matters, is given point to by the attached clipping, which I would suggest your using in INDUSTRIAL CANADA, instead of the dry stuff you furnish with the self-satisfying hope that members read it.
>
> Yours very truly,
> S. R. PARSONS.

This is the very amusing little article to which Mr. Parsons referred in his letter:—

WHY INTERSTATE COMMERCE COMMISSIONERS GROW THIN.

(George Fitch in *Collier's Weekly.*)

We should not blame the Interstate Commerce Commission too heavily for pondering along month after month on the freight rate problem. A freight rate is no such simple matter as differential calculus, the calculation of bridge stresses, or the weighing of asteroids. It is the result of a concentration of railroad genius of the past fifty years upon the task of making it entirely impossible for the shipper to understand a railroad book of tariffs.

When a citizen wishes to ship himself to another town he steps up to the ticket window and buys a small slip of pasteboard costing two or three cents a mile. But when he wants to ship a case of tomato catchup he goes to the station agent and asks for the rate.

Then the station agent sends for the derrick crew and they lower a half-ton book from the top of the safe, after which the agent looks up the rate on tomato catchup, without benzoate

of soda, shipped in pint bottles with fancy labels in a pine box, unpainted, by a middle-aged man with medium whiskers, who owns an automobile and votes the Progressive ticket.

He finds this about an hour after supper time, and discovers that the tomato catchup, if packed by a brunette, takes the classification E in the second zone, raised to the Nth power and multiplied by the logarithm .9876—amounting to 23 cents.

Thus it will be readily seen that a freight rate is no such simple thing as a passenger rate. Thousands of learned men are constantly busy planning and erecting new freight rates and classifications, and the science has now been perfected to a point where the ordinary citizen couldn't figure out the rate on a keg of nails for forty miles before the nails got stale. Undoubtedly the reason why the ancients did not have railroads was because the science of mathematics was not yet sufficiently perfected to produce freight rates.

Freight rates are based partly upon the weight, partly upon distance, partly upon the amount of money the shipper has, and partly upon the parallax of Alpha Centauri. This makes the adjustment a very complicated problem. We should have patience and thank our lucky stars because we are not an Interstate Commerce Commissioner. Revising freight tariffs is about as fascinating a job as dusting off pebbles in a desert, and as for the shipper or receiver proving freight rates or checking freight bills is (even with a vacuum cleaner added) equally futile.

ALBERTA.

Medicine Hat.

The Alberta Foundry and Machine Co. will build an addition to its plant, 120x160 ft., to include an iron foundry and machine shop to cost $20,000.

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

BRITISH COLUMBIA.

New Westminster.

It is reported that preliminary work in connection with the establishment of shipbuilding yards on Poplar Island in the Fraser River, B.C., has been commenced by the Westminster Marine Railway Company, New Westminster, which has started to clear the site. The company proposes to build a plant on the island to cost $70,000 and to install $15,000 worth of machinery.

Port Moody.

The contract for the construction of the shipbuilding plant, together with the necessary buildings for the foundry, engineering and woodworking plants of Boyd's, Limited, has been awarded and actual construction will be proceeded with immediately.

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DEPARTMENT OF FINANCE

OTTAWA.

Trail.

The new sulphuric acid plant of the Con. Mining and Smelting Co. is finished and now in operation. The new structure is a steel and brick building, 50 ft. x 150 ft., entirely lined with lead. Its output is about ten tons of acid a day. Half of the output will be used by the company in lead and zinc refineries, and the other half will be sold in the market.

Vancouver.

The British Columbia Sugar Refinery has taken out a permit for an addition to the factory on Powell Street, the cost of the work being $2,000.

Mr. Pickering, of the Standard Felt Company, of Los Angeles, Cal., recently paid a visit to Vancouver with a view to making arrangements for the erection of a Canadian factory.

Victoria.

The City Council recently issued a special permit to the Cameron-Genoa Shipbuilders, Limited, for the construction of three buildings on the Songhees Reserve, which do not comply with the by-law. Provision for non-inflammable sheathing of the buildings will be made, together with hydrant and other fire protection services. The Cameron-Genoa concern have decided to build three ships, which will be of the five-masted, baldheaded-rig type, and the services of J. H. Price, manager of the St. Helens Shipbuilding Company, of St. Helens, Ore., have been secured for the supervision of operations.

MANITOBA.

Grand Rapids.

D. B. McDonald, Winnipeg, promoter of the Manitoba Power, Pulp and Paper Co., to be established at Grand Rapids on the Saskatchewan River, states that all plans for the project have been prepared. They include a sawmill, paper factory, pulp mill and hydro-electric power transmission plant. The capacity of the pulp and paper mills will be 100 tons a day. The whole scheme will mean an outlay of perhaps $2,000,000.

Winnipeg.

The Western Canada Marble and Tile Co., Limited, have purchased a site for $100,000 and are completing a finishing plant, 175 x 52 feet in size, costing about $10,000.

Charles Blair, Stockport, England, has communicated with Chas. H. Webster (Industrial Bureau of Winnipeg) signifying his intention to build a factory for the manufacture of surgical dressings and spend between $300,000 and $400,000 in buildings and equipment.

Damage to the extent of $100,000 was done to the plant of the Winnipeg Paint & Glass Company by fire on August 2. The woodworking mill, boilerhouse, and several dry kilns were destroyed. A large barn in which were stabled nineteen horses was seriously threatened, but escaped. The company has decided to rebuild the factory immediately. The loss is covered by insurance.

NEW BRUNSWICK.

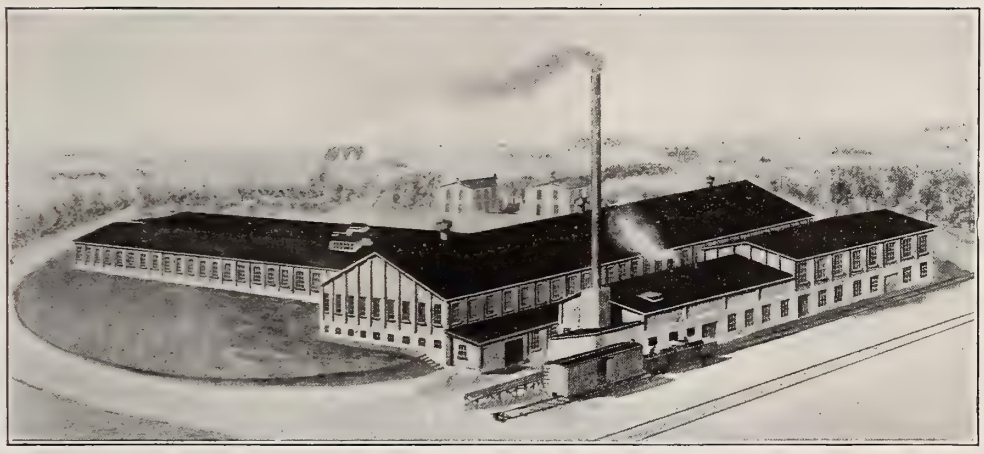
Millerton.

It is understood that English capitalists under Sir Robert Perks have taken over the plant of the New Brunswick Pulp and Paper Co., and will rebuild on a larger scale.

NOVA SCOTIA.

Dartmouth.

It is reported that the Imperial Oil Co. intend to erect a large oil refinery here, which may cost $5,000,000. They have secured 460 acres of land with a harbor frontage of 1,300 feet.



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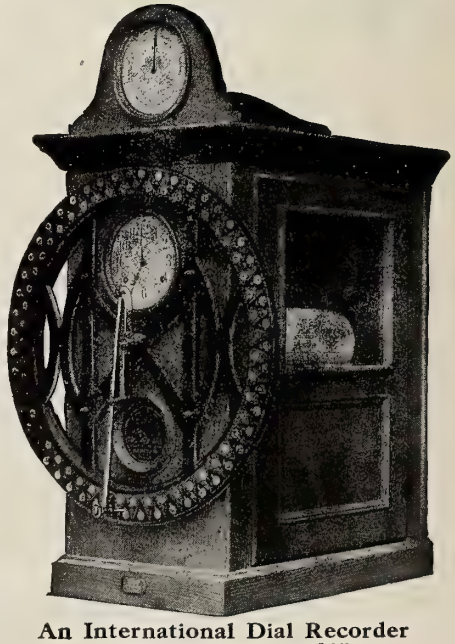
Your largest "buy" is labor, and of course you have some kind of check on it. If your method of checking is wrong or expensive, or if it depends on the human element, you are likely wasting time and losing money every day.

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7. Gives the employer a printed statement of the comings and goings of each employee.
8. Promotes punctuality.
9. Punctuality creates an improved morale in an Organization as well as discipline.
10. Promotes honesty.
11. Saves time in making up the payroll.
12. Makes every man his own time keeper.
13. Prevents an employee from slipping in at the back door.
14. Causes an employer to pay only for what he gets in labor.
15. Gives every man a chance to prove he is honest.
16. Interest on investment is the cheapest insurance premium in the world for what it insures. Multiply your weekly payroll by 52, which indicates real money.
17. There is nothing more important to insure than the money.
18. Makes everybody feel they are being treated alike.
19. Renders a payroll in complete form.
20. The record is authentic made in the man's own time and at no expense to the firm.
21. Record can be easily compiled.
22. Helps production by getting employees in on time.
23. Causes increased output.
24. Reduces overhead burden.
25. It is the only fair method to the employees.
26. Shows no favorites, tells no lies.
27. Being automatic requires very little attention.
28. Employees can not dispute their pay.
29. It has proven itself to the most successful employers of labor in the world.
30. It saves money for our competitors, so we could not afford to be without it.
31. It is not fair to the employee who comes on time not to dock the man that is late.
32. The printed record cannot be changed.
33. The printed record cannot be disputed.
34. It is a cold-blooded recorder.
35. It is always on duty.
36. It never gets sick or makes excuses.
37. With a two-color device your payroll is 95 per cent. audited for the office.
38. It prevents a padded payroll.
39. More correct in recording time than any man, pencil or ink.
40. It is an asset after once installed.
41. It lasts for many years.
42. The great savings from our time recorders help our dividends.
43. With programme attachment, it warns all departments of the right time.
44. It cannot be beaten.
45. Protects the greatest raw product purchase we make.
46. It stopped a serious leak.
47. Indicates quickly whether an employee is In or Out.
48. It is simple payroll insurance.
49. It has a beneficial effect on an employee even before he reaches the factory.
50. It is an accurate time measure.
51. The watch dog of our time-keeping system.
52. The quickest time-recording system in the world. We tried many others.
53. Easily operated.
54. Eliminates unpleasant duty of reprimanding late employees.
55. The record is permanent.
56. The record is made when employee enters plant, not fifteen minutes later or afterwards.
57. Gives a record easily filed and easily referred to.
58. Simplifies the work in the office.
59. The red records are the thermometer of our business.
60. We only need to check the reds.
61. The record is the danger light to the employee.
62. It indicates that your firm believe in modern methods.
63. It indicates that we are amongst successful manufacturers.
64. It indicates to our employees that we want to treat them fair.
65. It took us four years to buy our first time recorder. It took us four minutes to buy the additional ones we found we needed.
66. We are willing to be influenced by successful people. We found they were using time recorders.

If you fully realized that these are facts, you would buy an International Time Recording equipment

International Time Recording Company of Canada, Limited

Toronto:
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Phone Coll. 7393

F. E. MUTTON,
General Manager

Montreal: W. A. WOOD, Jr.
Sales Agent, Cartier Bldg.
Cor. McGill and Notre Dame Sts.
Phone M. 7025

AGENCIES WANTED FOR WINNIPEG.

Manufacturers' Agent, established Winnipeg fourteen years, wants to represent Eastern Manufacturers West of Port Arthur. Shall send references and particulars.—Write Box 52, INDUSTRIAL CANADA Office, Toronto.

SUPERINTENDENT WANTED.

Superintendent for factory employing 150 men. Must be graduate Mechanical Engineer, with practical experience in factory management. We have a modern plant and a growing business. None but Canadians or Americans with Canadian experience need apply. Address "Industrial Canada," Toronto. Box 48.

BRYAN PONTIFEX
CHARTERED ACCOUNTANT
Factory Accounting a Specialty
EXCELSIOR LIFE BUILDING
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TORONTO
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Halifax.

The real estate and personal property of the Nova Scotia Car Works was recently sold at auction by the liquidator. The property was knocked down to F. B. McCurdy, M.P., for the Canada Corporation, for $167,500, which price is subject to a mortgage at $115,000, held by the City of Halifax. The sale was under the Winding-up Act, but it is understood that the old security-holders of the company now in liquidation will be afforded the opportunity of protecting their investment by joining in the re-organization contemplated by the purchasers, and the property will be offered to them at the cost price.

Sydney.

W. E. Clark, vice-president and manager of the Sydney Foundry and Machine Co., intends to erect at once a large marine repair plant and slip, to be followed by the construction of a dry dock.

A flour mill, costing about $60,000, may be built here by the Atlantic Milling Co., Pictou, N.S.

FOR SALE
LATHES, CUTTING-OFF MACHINES
And other machine tool equipment for Eighteen-pound English Shrapnel Shells. Machines can be inspected and prices quoted at
National Steel Car Co., Limited, Hamilton, Ont.

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Do You Know that 1-16 in. Scale on the Inside of Boiler Shell Will Cause a Loss of about 13% in Fuel?

PROTECTO
BOILER PRESERVATIVE
Is not a water treatment but has an affinity for hot metal. After clearing your Boiler Plates and Tubes of Scale it forms a protective enamel to which further scale will not adhere. We are willing to give you thirty days' free trial and ABSOLUTELY GUARANTEE PURE STEAM. Prevents foaming or priming.

PROTECTOCOAT
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Fills up present cracks and prevents new ones forming. Guaranteed for FOUR YEARS. Cold air penetrates all untreated brickwork and thereby reduces percentage of Carbon Dioxide in your chimney gases from the Practical Minimum percentage of 14% to perhaps as low as 3%, entailing a loss per $1000 fuel of $15 to $535.

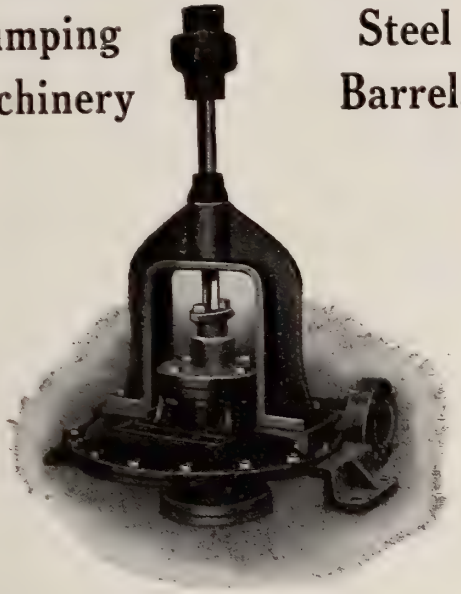
Write for booklet giving prices and full particulars of these products and opinions of some of the best known factories regarding same.

Write or wire us for current prices on available Paper, Bags and Paper Goods.

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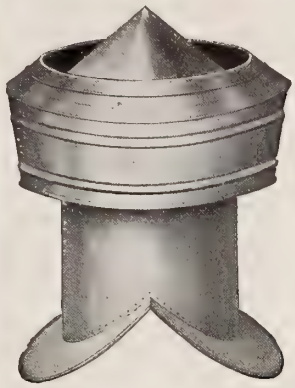
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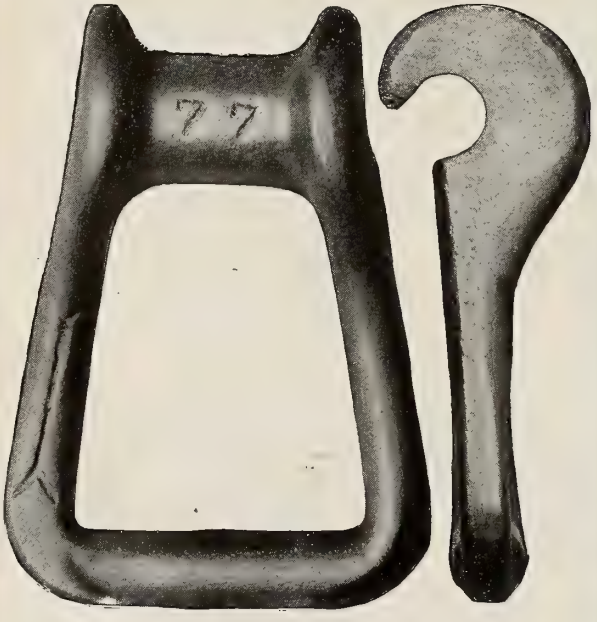
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BASED on an experience of forty years, we have so redesigned the old standard form of Link-Belt invented by William D. Ewart, in 1873, and so re-arranged the distribution of the metal that we have succeeded in producing a link one-fifth stronger than the old standard link without additional weight, without advance in price, and without sacrificing interchangeability.

The New Link-Belt will be furnished hereafter as rapidly as the patterns for the various sizes can be made. We can now supply the New Link-Belt in a few standard sizes only. Further particulars on request. This trade-mark >——< on every link.

CANADIAN LINK-BELT CO.
LIMITED
1189 KING ST. WEST, TORONTO

ONTARIO.

Arnprior.

A contract has been let by David Craig for the erection here of a grist mill and elevator, to cost about $18,000.

Barrie.

The general contract has been let for the supervision of alterations to the Anderton Brewery property, the installation of machinery, etc., for Standard Milk Products, Limited.

Brantford.

It is announced that the Dominion Steel Products Co., a recently incorporated company, will locate their plant here and will put up a main building, 400 by 90 feet in size.

The Hample Paper Box Co. are erecting a $12,000 box factory here.

Brockville.

The Canadian Briscoe Motor Company are taking over the old electric light building and premises here and will install a pressed steel plant for manufacturing parts for auto accessories. T. Storey, the president of the company, said that more houses for workingmen would be needed and told of what the company had done to erect such homes in Jackson, Mich.

Burford.

The general contract for the plant to be erected here by the Canadian Milk Products Co., Toronto, has recently been let, and construction will commence at once. The building will be of glazed brick construction and will cost $100,000.

Chatham.

The contract has been let for the erection of the addition to their premises to be made by the American Pad & Textile Co. It is to cost about $40,000.

Chippawa.

The new plant of the Canada Nickel Smelting and Refining Co. is practically complete and will soon be in operation. It will be the first nickel refining plant to use Niagara power.

Clinton.

A new dry kiln, costing $4,500, is being installed by the Doherty Piano Co.

Deseronto.

The large plant of the Dominion Hardwood Co., Limited, was totally destroyed by fire recently. The loss is placed at $100,000, partly covered by insurance. The company expects to rebuild immediately.

Doon.

The plant of the Doon Fibre Co., recently totally destroyed by fire, with a loss of $45,000, is to be rebuilt and new equipment installed.

Dundas.

The John Bertram & Sons Co., Limited, have been receiving tenders for the erection of a reinforced concrete pattern shop and storeroom in connection with their plant here.

Elora.

The Elora White Lime Company, which owned and operated kilns in the village, has sold out to the Alabastine Co., Limited, of Paris. The Elora White Lime Company had four kilns in operation, manufacturing a special line of hydrated lime, for which the rock at Elora is well suited.

Fergus.

Beatty Bros. are having plans prepared for an extension to their plant. The new building will be about 400 feet long and 72 feet wide, of saw-tooth construction. It is to be erected

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By keeping the air in your factory fresh and clean you increase the working power of your employees. A keen eye and a clear brain make for good workmanship. They also avert accidents.

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is a simple device for removing the bad air from the factory. By producing a partial vacuum it draws the vitiated air out and causes a steady flow of pure air through the building.

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Foreign Domestic **WOOL** *Noils, Wastes and Shoddy*

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Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative **13 Church St., Toronto**

alongside their new premises near the stations, paralleling them at 66 feet apart. The intention of the firm is to take all the iron-working machinery to the station plants, leaving the building on the Grand River for their woodworking machinery. It will also house the sheet iron department and provide a large addition for shipping facilities. The sheet iron department will then make their tanks, which are at present purchased from other firms.

Galt.

Work was started last month on the new plant of the Roelofson Machine & Tool Co., which will be a building 185 x 105 feet.

Gananoque.

The local plant of the Steel Company of Canada is to be enlarged by the erection of a small addition.

Guelph.

The Dominion Linens, Limited, are making an addition to their premises here.

Hamilton.

A $12,000 addition is being made to the plant of the Steel Company of Canada.

The F. F. Dalley Co. have awarded a contract for the erection of their new five-storey factory.

The Victor Saw Works are erecting an addition to their plant here at a cost of $6,000.

Plans have been prepared for alterations to the premises of the Appleford Counter Check Book Co., estimated to cost $7,500.

A new factory has just been built for the T. Eaton Co. at the corner of John and Gore Streets. It is 300 x 75 feet. four storeys high, and of reinforced concrete construction.

Harrow.

C. F. Smith is rebuilding his planing mill, recently destroyed by fire. The new structure will cost about $10,000, being of cement block construction. It will be fitted with electrically driven machinery.

Lindsay.

It is expected that the new Dominion Government small-arms ammunition factory at Lindsay, Ont., on which work is now progressing, will be completed in the month of September. One reason to which the choice of Lindsay as the location of the arsenal may be attributed is on account of the large supply of electrical energy which the town has on tap. The site of the plant is one hundred acres of land in the South Ward. The building will be of concrete, steel and glass, and Messrs. Westinghouse, Church & Kerr Company, of New York, in whose hands the contract has been placed, purpose to employ fully four hundred men on its erection and the installation of machinery. It is stated that already millions of dollars have been expended on machinery and that a big rolling mill plant has been purchased in the United States. The numbers of hands to be employed in the factory, it is announced, will be about 2,000.

Several of the contracts for work in connection with the construction of the new woolen mills to be built here by the Horne Bros. Woolen Co., Limited, have been let.

Premier
MORE MILES PER GALLON
Gasoline

Experienced motorists know the value of getting, not merely good fuel, but the same fuel every time the tank is filled.

Premier Motor Gasoline is a homogeneous, uniform refinery product —the same wherever you buy it.

Polarine Motor Oil—the lubricant that never thickens from cold.

THE IMPERIAL OIL COMPANY
Limited
BRANCHES IN ALL CITIES



"We've got to save our concrete floors"

"Our cement floors are comparatively new and are the best we could lay down, but the surface is already sanding, water is getting spilled on them and they are soaking up oil. I tell you, gentlemen, we have got to save them."

R.I.W. (REMEMBER IT'S WATERPROOF) REG. U.S. PAT. OFF. CEMENT FILLER & CEMENT FLOOR PAINT PATENTED AS TO PORTLAND CEMENT FEB 27, 1906

will keep cement floors wearproof, waterproof and oilproof.
Scuffed off dust won't float in the air to ruin merchandise, get into bearings and cause electric motors to spark.
Oil won't get in, never to be gotten rid of, to injure the concrete.
R. I. W. Cement Filler and Cement Floor Paint fill up the sandy, porous surface and prevent all wear on the floor itself.
Twelve standard shades.
Let us mail you a special booklet. Address Dept. 55.

Manufactured in Canada by
R.I.W. DAMP-RESISTING PAINT CO.
TOCH BROTHERS
Gerrard St. and Carlaw Ave.
TORONTO, ONTARIO, CANADA

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Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
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Nitric Acid	Hypo-Sulphite Soda	Sulphate Alumina	Ammonia
Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
Mixed Acid	Phosphate Soda	Caustic Soda	Tin Crystals

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$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

J. R. BAXTER & CO., LTD. Montreal
H. W. PETRIE LTD. Toronto
McDOUGALS LTD. Ottawa
COWAN HARDWARE CO. London
WALKERVILLE HDW. CO. Walkerville
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Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.

NEW TORONTO. ONT. CANADA



A Modern Industrial Plant Built Fireproof Kahn System

Daylighted with Kahn Steel Sash

E. A. Wallberg, Contractor

Dominion Tire Co. Building, Berlin, Ont.

Albert Kahn, Architect
Ernest Wilby, Associate

KAHN SYSTEM Reinforced Concrete

TRUSSED CONCRETE STEEL CO.

OF CANADA, LIMITED

Head Office and Works - - Walkerville, Ont.

BRANCHES:

Montreal Toronto Winnipeg

KAHN SYSTEM Reinforced Concrete

London.

Plans are being prepared for an addition to a factory for J. R. Shuttleworth, 377 Dundas Street. It will be of brick construction and will cost about $10,000.

Hunt Milling Co. are contemplating the erection of an addition to their flour mill here, to cost about $50,000.

The Canada Cereal Mills Co. propose to erect a white brick addition to their premises, at an estimated cost of $10,000.

*The statement made in the July issue that the Hall Glove Co., of Jersey City, were proposing to erect a textile factory at Simcoe is incorrect. The secretary of the London Board of Trade states that after a very thorough investigation of the labor situation throughout Canada, the H. S. Hall Co., of Jersey City, have leased premises at London with the intention of manufacturing lisle thread and chamoisette gloves. The company, which operates six factories in the United States, will build a $25,000 plant at London next year.

Markham.

The corporate name of the Canada Cereal Company, Limited, Markham, Ont., has been changed to that of Cereal Mills, Limited. This is a new company organized some few months ago to take over several small milling concerns located in Markham. A new plant is being erected.

New Toronto.

Contracts for the erection of the Goodyear Tire & Rubber Co.'s new plant here have now been let and construction is being pushed forward. The general contract for the plant was awarded to the Dominion Construction Co., Toronto.

Brown's Copper and Brass Rolling Mills, Limited, are erecting a $25,000 mill here.

Ojibway.

It has been again stated that the erection of the big steel plant which the United States Steel Corporation plans to erect at Ojibway, near Windsor, Ont., will be started at once. The company over two years ago secured a large tract of land as a site, but little has been done up to the present. It is understood that the plant to be erected will cost about $25,000,000.

Oshawa.

The contract for the erection of the $50,000 factory which the Chevrolet Motor Co. are to build here has been let to a local contractor.

Ottawa.

The International Land and Lumber Co., whose headquarters are at Ottawa, intend erecting a 100-ton pulp mill on the Ashuapmauch River in the Lake St. John district. The company own several hundred miles of limits on the east shore of the lake. Among those back of the project are J. L. Bate, R. N. Bate and Thomas Askwith, of Ottawa.

Parry Sound.

An addition, estimated to cost about $20,000, is to be made to the plant of the William Beatty Co., Limited, and tenders for the work were recently called.

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

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188 Yonge St., Toronto



Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

By the Toronto Furniture Co., *Limited*

"MANY A THING DIVINELY DONE BY CHIPPENDALE AND SHERATON."—Andrew Lang.

OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

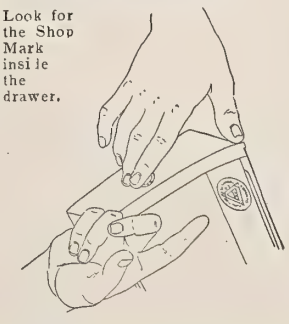
TORONTO FURNITURE CO., LIMITED

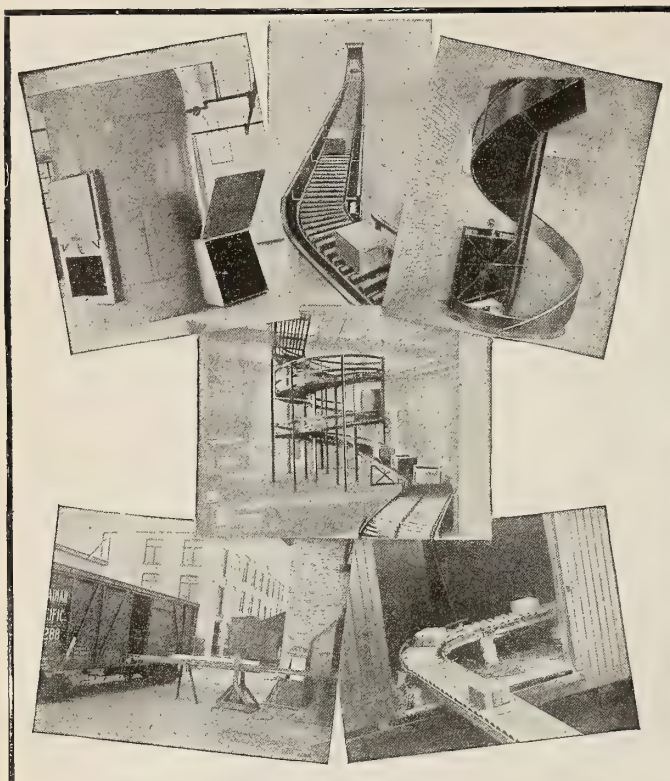
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Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.

Look for the Shop Mark inside the drawer.





Let us systematize your handling problem.

Canadian Mathews Gravity Carrier Co., Ltd.
484 Richmond St. W., Toronto Patented

Point Edward.

A company, of which George Oakley, of Toronto, and E. C. Giberson, of New York, are the promoters, have made arrangements for the erection and operation of a stone cutting plant at Point Edward, Ont. The contract for the foundation has been awarded and it is understood that work is already under way. The building will be constructed of cement and will be 107 feet x 180 feet in dimensions. A railroad track will run down the middle of the factory so that heavy stone and material can be conveniently handled. The latest type of stone cutting machinery will be installed. Eventually it is expected the factory will give employment to 100 men.

Port Arthur.

One of the two ships now being built at the plant of the Western Drydock & Shipbuilding Co., Port Arthur, is for the British Sulphite Fibre Co., of Vancouver, B.C., and the other is for the Great Lakes Transportation Co. The dimensions of the vessels are: Length overall, 261 ft.; breadth, moulded, 43½ ft.; depth, 28 ft. 2 in.; carrying capacity, 3,000 gross tons.

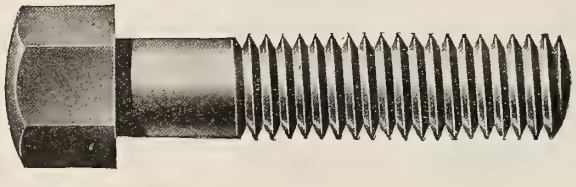
Port Robinson.

The Structural Steel Co. have leased the British Canadian Canners plant here and will remodel it as a factory to be used in connection with their present orders.

Renfrew.

The O'Brien Munitions, Ltd., have started razing old buildings, preparatory to the construction of three new buildings, at an approximate total cost of $6,500. Frame and corrugated iron construction.

MORROW SERVICE

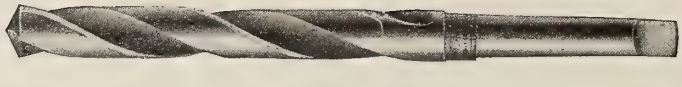


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Cap Screws
Twist Drills, etc.

During these strenuous times it has been our ambition and effort to give our old friends (our customers) good service in the matter of reasonably good delivery, and consistent prices.

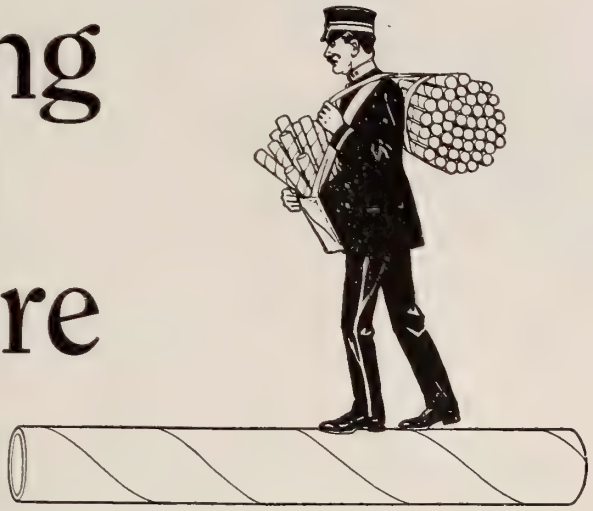
We would ask our customers to assist us by placing their orders with us as far ahead of their actual needs as possible. Will you help us?

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INGERSOLL - ONTARIO



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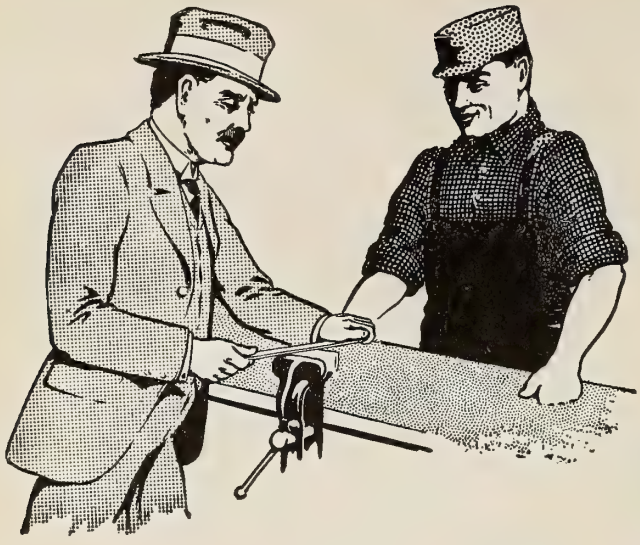
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Hillsborough, New Brunswick, Canada

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Here is a man at a bench, filing.

The file is worn.

He makes three strokes where, with a sharp file, he need make but one.

It takes him three times as long to do the job.

When it is finished, he is not as well satisfied with it as he would have been if he had a proper file.

The foreman thinks the man is slow or lazy. The man's time sheet does not give him as good a record as the man who is working at the next bench with a sharp file. The man gets irritated. So does the foreman and the employer who pays the bills.

But, throw away that file the minute it reaches its "inefficient point" and what do you get?

The new file costs a few cents. The man does his work in one-third of the time. He is more satisfied with his job. The foreman is pleased with the man—and the employer has saved money on the time sheet.

See to it that the first condition of affairs described is not common in your factory. Instruct your foremen to educate their workmen to turn in files the moment they reach their "inefficient point." Your investment in new files will more than pay for itself.

Nicholson File Company

Port Hope *(Dealers Everywhere)* **Ontario**

St. Catharines.

A boiler house, to cost about $6,000, is being erected for the McKinnon Dash & Hardware Company. It is to be of brick construction.

The Packard Electric Co. are building an addition to their factory, 50 ft. x 145 ft., of steel and concrete construction.

The Electro Steel & Metal Co. have taken over a planing mill on Niagara St., and have remodelled it as a factory to be used in connection with their present orders.

St. Thomas.

The American Brakeshoe and Iron Castings Company, of Mohawk, N.J., propose to erect a large foundry here. The structure will be 225 x 50 feet, one storey high, and will be located adjacent to the Canada Iron Foundry plant on Talbot Street. The plant will manufacture all the Canadian orders for the American Brakeshoe Company, which have hitherto been made in the United States, and will employ about 100 men. C. D. Pettit, of New York, is president.

A new mill, to cost about $50,000, will be built here by the Monarch Knitting Co., Dunnville. Ratepayers recently voted in favor of giving the company a loan and making certain other concessions.

Simcoe.

The Unique Shoe Company have started the erection of their factory here. It is of mill and brick construction, and will cost about $12,000.

Smooth Rock Falls.

Some six hundred men are now at work constructing the coffer dam for the Matagami Pulp and Paper Co., at Smooth Rock Falls, Ont., and also excavating for the foundation of power house and the sulphite mill. Good progress is being made considering the scarcity of labor. The contractors report that they could use several hundred more men, but are unable to secure them.

Sudbury.

It is stated that The British-American Nickel Co. will build a new refinery near here, work to be started in September and completed by May. This is a new company, with $5,000,000 authorized capital, supposed to be connected with Mond Nickel Co. and Mackenzie-Mann interests.

Teeswater.

The Toronto Plaster Company, Limited, has purchased a site and intends erecting a large plant thereon for the manufacture of lime.

Thorold.

The general contract for the erection of the sulphite pulp mill to be erected by the Ontario Paper Co., as well as the contract for an addition to the machine room of the company, has now been let and construction has begun.

Toronto.

It is rumored that the Toronto Carpet Mfg. Co. will likely erect a new factory.

Excavation work was begun last month on the construction of a reinforced concrete factory building, 65 x 100 feet in dimension and four storeys high, on the southwest corner of Bloor and Dufferin streets, for the T. Eaton Company, Limited. This building will probably cost about $50,000. Adjacent to it there will also be a one-storey factory, 63 ft. by 130 ft.

BOECKH'S BROOMS
for FACTORY AND MILL USE



Are machine made and are superior in every particular to the ordinary make, as same are solidly constructed so as to hold their shape until entirely worn out.

We personally select fine, tough Illinois Corn for our Brooms direct from the growers, enabling us to give the lowest market prices consistent with quality and workmanship at all Seasons of the year.

We guarantee each and every Broom to possess great tensile strength and elasticity, which means long and satisfactory wear, and if found defective in any way after proper use, same will be replaced without charge.

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THE BOECKH BROS. COMPANY, Ltd.
TORONTO : ONTARIO

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Made to hang or stand in racks only — so that you will always know where to look for them.

WE do not advise you to under-insure your property, but we say that if Eddy's Round Bottomed Fire Pails are part of your fire-fighting equipment you will likely get a lower rate than you otherwise would have done.

Write for particulars to HULL, CANADA
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THE E. B. EDDY COMPANY, LIMITED

A $6,000 addition is to be made to the plant of the Canadian Allis Chalmers, Limited.

A factory to cost about $40,000 is to be established in Toronto by the Canadian Bag Co., of Montreal. It will be built on Paton Road, and will be of brick and mill construction.

Construction work has been commenced on the new Russell Motor Car Company factory on Eagle Avenue, Weston, Ont. The building will be a two-storey brick structure, 300 feet square, standing on a site of 28 acres. It is expected that it will be completed by October.

Work is progressing on the construction of a $20,000 warehouse on Cawthra Avenue, which is being built for the Campbell Flour Mills Co., Limited.

It is reported that the Federal Dyestuff and Chemical Corporation, 30 Pine St., New York, proposes to establish a plant in Western Ontario, in conjunction with some Toronto capitalists, for the manufacture of dyestuffs, etc.

A permit has been granted to the Southam Press, Limited, for an addition to their premises, to cost about $4,000.

A bakery, to cost about $30,000, will be erected by the Bowles Lunch Co., Limited. The contract has already been awarded.

Work on the construction of the new garage and factory being erected by the T. Eaton Co., at the corner of Teraulay and Alice streets, is progressing rapidly, and the erection of the big factory adjoining on Alice Street, which will cost three-quarters of a million dollars, is under way.

A contract has been let for certain additions and alterations to the premises of the Harris Abattoir Company, West Toronto.

Walkerville.

Hiram Walker and Sons have had plans prepared by Walker and McPhail, Tuson Block, Windsor, for a $20,000 factory building, which is to be occupied by McCord Manufacturing Co. It will be of brick construction. An old building will also be remodelled.

Welland.

The Welland Motor & Machine Co. are reported to be about to build a $3,500 factory.

QUEBEC.

Beauceville.

Marcoux and Porier's foundry, which was recently destroyed by fire with a loss of $12,000, will be rebuilt and new machinery installed.

Ha-Ha Bay.

The contract has now been let for the pulp mill to be erected here by the Ha-Ha Bay Sulphite Co.

Montmorency Falls.

The plant of the Dominion Textile Co. here is to be enlarged by the erection of an addition, to cost about $90,000. It will be built of reinforced concrete, 245 x 45 feet, five storeys in height.

Montreal.

A factory to cost about $8,000 will be erected by the J. J. Joubert Co.

The
Montreal Lithographing
Company, Limited

High Class Lithographers
and Designers of

CALENDARS SHOW CARDS
LABELS OFFICE STATIONERY
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Mills at St. Jerome and Mont Rolland, P.Q.

Fire recently damaged the cold storage plant of A. A. Ayer & Co., Limited, to the extent of $10,000.

Alterations to the factory of the National Acme Co., on Acorn Street, are being made, to the extent of about $6,000.

The St. Lawrence Wagon Co. are proceeding with the erection of a factory at 34 King Street.

Quebec.

It is stated that Price Bros. & Company, Limited, propose to make considerable enlargements to their plant. This will include the erection of a new unit to be added to the news print mill, and additions to other plants which will increase the company's production of sulphite and ground wood pulp. The new paper unit will probably be in operation by February 1, 1917, while it is expected that the other additions will be completed by October of the current year.

An addition to the premises of the St. Lawrence Paper Bag Co., at 103 Marguerite Street, is under contemplation, and private tenders have been received for the work, which it is estimated will cost in the neighborhood of $20,000.

Work on the construction of the new factory of the Dominion Corset Mfg. Co. is progressing, and contracts for the heating, plumbing and electrical work have recently been awarded.

Sherbrooke.

A warehouse, to cost $40,000, and an addition to the mill, to cost $50,000, will be erected by the Canadian Cotton Mills, Limited. Contracts have already been let for the work.

Riordon Pulp & Paper Company, Limited

Montreal

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CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS SPRUCE" SHEATHING in 36 and 72 INCH ROLLS

SPRUCE LUMBER, CLAPBOARDS CEDAR SHINGLES, RAILWAY TIES, FENCE POSTS

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Loose Leaf Ledgers, Binders, etc. Leather Goods, Diaries, Paper, Stationery, Office Supplies

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We Say That
The KRYPTON LINES
Are the Finest-
Writing Papers
Produced in Canada
HOWARD SMITH PAPER MILLS
LIMITED.
BEAUHARNOIS, P. Q.

CANADIAN
TRADE
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BLEACHED SULPHITE
Manufactured and Sold by
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Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

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The New Zealand Shipping Co. LIMITED

213 Board of Trade Building, Montreal

Sorel.

A mica products factory, to cost about $10,000, may be built here by the Longborough Mining Co.

St. Jerome.

Foundation work was started last month on a foundry building which Alfred A. Viau is building here.

The Regent Spinners, Limited, contemplate building a mill here at an estimated cost of $28,000, with an expenditure for machinery of $20,000. It will be three storeys, brick and mill construction.

SASKATCHEWAN.

Regina.

The contract has now been let for the erection of a plant for the Prairie Biscuit Co. It is to cost about $20,000.

Saltcoats.

Fire recently damaged the premises of the Saltcoats Flour Milling Co. to the extent of about $50,000, which is covered by insurance.

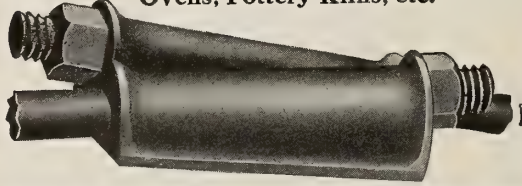
PONTINE, LATEST FASHION CREATION.

Pontine is the newest product of the Du Pont Company, and already it has found great favor with fashion leaders in New York, London and Paris. Pontine is decidedly one of the smartest fabrics to be found on the market and is sure to be utilized for many purposes. It is especially beautiful for making hats, cloaks, dresses and coats. In order thoroughly to appreciate how Pontine lends itself to millinery, twelve beautiful hats were made by Phipps, of New York. These twelve Phipps model hats will be awarded to the twelve women shooters making the highest scores at the Grand American Handicap Tournament, to be held at St. Louis, August 21-25, 1916.

Pontine is really an exquisite material and is the result of many careful experiments made at the Du Pont plant at Newburgh, N.Y. It comes in all shades, and in some cases the Pontine process is applied to brocaded satin with very desirable results. Such a handsome and adaptable material is sure to take fashion centres by storm and will doubtless be all the rage before the season is over. Already it may be purchased in some exclusive shops, but the public has not yet become thoroughly acquainted with the product.

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On Silos, Tanks, Water Pipes, Penstocks
Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods ⅝ to 1½ inch — Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

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One Hundred Norways in One

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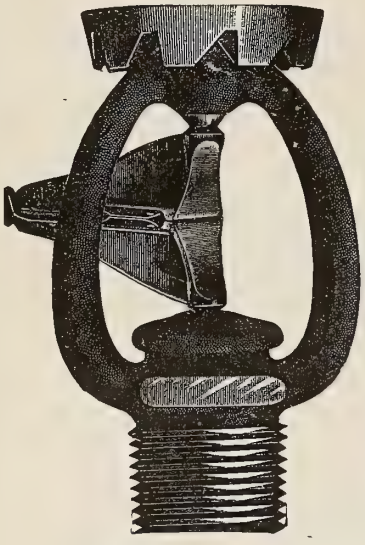
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IT'S A GREAT BIG MONEY SAVER.

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169 Duke St., MONTREAL, P.Q.

TWO-PRICE SYSTEMS.

Many manufacturers have two prices—one for cash, another for long time accounts. They are forced to take this means of protecting their capital and their credit. If a manufacturer has his money tied up in delinquent accounts it is obvious that he must in some way conserve the value of his disseminated capital. This principle has been worked out in unique fashion by a two-price grocery store in Inglewood, near Los Angeles. The customer who enjoys credit, delivery and accommodations of various kinds, pays one price. The customer who pays cash and carries his purchases home pays another price, amounting in general to a ten per cent. discount—sometimes lower. People pay for what they get. Those who obtain credit and service pay for it. Those who wrap up their own parcels and carry them home obtain the benefit of lower prices, as they should. There are no complaints; everybody is satisfied.—*Manufacturers News.*

WASH-HOUSE LAW.

Among the laws now in force in Illinois, is one popularly styled "wash-house law." Providing for adequately heated factory wash-rooms with sanitary and locker facilities, the results show that the workman returns to his home clean and tidy, and insists upon the same conditions among members of his family. Over $1,500,000 has been expended by manufacturers in complying with the law and many have expressed themselves as finding the investment one of the best they ever made in the cause of industrial betterment.—*The Dodge Idea.*

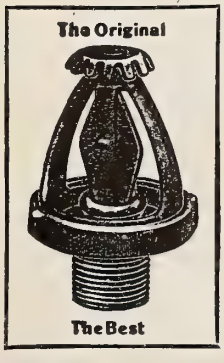
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will protect your factory, your warehouse, your office building, etc.

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will protect your house and garage from fire. Act instantly in the case of gasoline fires. Easily handled. Can be operated by a woman as well as by a man.

STANDARD FIRE BUCKET TANKS

are always ready for use. They contain six buckets with handles always above the water. Are airtight, thus preventing water from becoming stagnant.

These appliances can be procured at

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TOWERS
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also wood and steel tanks for Municipal, Railway and Suburban water supply.

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and other garments of this class can put more value into their products, without increasing costs, by using Dominion Textile

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CHANGES IN SCREW-MAKING POLICY.

Two important announcements regarding the manufacture of screws have recently been made by the National-Acme Mfg. Co., of Cleveland, which should be carefully noted by all manufacturers interested in the product. The first announcement has to do with threads. The company states in this connection that it intends in future to favor the U. S. form of thread and ultimately to adopt it for its entire line of cap and set screws carried in stock, leaving the V thread to be made to order when specified.

The U. S. thread is stronger than the V, says the National-Acme Co. The U. S. thread, as commonly used, has a greater tensile strength than the V, and a greater torsional strength. This is an advantage, particularly in the smaller diameters. In the larger sizes, V threads, unless very carefully handled, are susceptible to "nicking" on their sharp edges, thus bringing complaint of non-interchangeability from the user, and through no fault of the manufacturer. Furthermore, V threads have a tendency to act as a tap, a fault common to case hardened set screws where replacement is frequently necessary.

Complaint is frequently made that the existence of two standards for cap and set screws places a handicap upon the jobber. Those offering a "complete line" are now required to stock both V and U. S., yet many sizes of V are rarely, if ever, specified by users, and are, therefore, held as emergency or dead stock. Obviously, the elimination of the V form will be welcomed by the dealers.

To the manufacturer, the theoretical V, with its razor-like apex, is manifestly an impossible thread to produce by ordinary means in practical quantities. Because of this, various makers have adopted different modifications of the theoretical form, (allowing a flatted top and bottom of thread) according to their own judgment. But, inasmuch as there is no

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THE GUARANTEE WITH OUR
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Underwear, Hosiery and Sweaters
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MANUFACTURERS OF

Plow Lines, Clothes Lines, Jute Twines of every description Warehouse Twines Light and Heavy Wrapping Twines

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and

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OF EVERY DESCRIPTION

PRESSES
Made in Canada
HYDRAULIC PRESSES, PUMPS AND ACCUMULATORS
Forging, Nosing and Marking Presses for all Size Shells
Presses for General Purposes
WILLIAM R. PERRIN, Limited, TORONTO CANADA

EXPORTERS OF
Reed Organs, Piano Stools,
Music Cabinets.
Catalogue B.
The Goderich Organ Co. Limited
GODERICH, CANADA
Closet Seats,
Flush Tanks,
Medicine Cabinets,
Everything for the Bath Room.
Write for Catalogue C. and Price List.

understanding among the manufacturers as to these modified V formulae, the hardship of too numerous modifications in flats is again felt by the user. The U. S. thread has a uniformly flatted top and bottom—it is a definite standard.

The second announcement made by the National-Acme Co. concerns the height of the head on set screws. "It has long been the consensus of opinion among set screw manufacturers, that the old standard for size of head is unnecessary in point of practical service. Therefore, this Company has adopted a standard in accordance with the following formula:

"The height of head on standard set screws shall be equal to three-quarters the diameter of the body. These dimensions will be used for all sizes of set screws carried as standard stock. However, until 1917, either the old or revised style of heads may be considered regular and will be furnished at standard prices. Our present stock of set screws will be replaced by the revised style as rapidly as possible. It is believed, in view of the present reduced condition of stocks, that the change will not work a hardship upon our customers; and we respectfully urge their co-operation in the adoption of the new standard for all sizes, and as rapidly as possible."

PROCESS EXHIBITS AT THE C. N. E.

From the standpoint of process exhibits, the production of goods under factory conditions, the Canadian National Exhibition will be particularly interesting this year. Two different firms will produce shells, one shrapnel and the other high explosive; another firm will put in a large number of looms and manufacture linens, while still another will produce breakfast foods before the crowds. There will also be silk winding processes, glass cutting, aluminum spinning, gas mantle manufacture, and a working model of a powder mill in full operation.

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WROUGHT PIPE BLACK AND GALVANIZED 1/8 TO 4 INCH
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"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

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Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID,
Minister of Public Works and Highways.

W. C. McGHIE,
Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID,
Minister of Public Works.

D. M. MEDCALF,
Chief Inspector of Steam Boilers.

Established 1849

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THOS. C. IRVING, Gen. Man. Western Canada, Toronto

BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton. Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal. Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt. Ont.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro. Ont.

BOILER COMPOUND and OILS
*Canadian H. W. Johns-Manville Co., Toronto.
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal, Que.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, heating
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement See Index, Page 457

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BRONZE, Cored Bars
*Kinzinger, Bruce & Co., Limited. Niagara Falls, Ont.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Boeckh Bros. Co., Toronto.

BRUSHES
*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co., Welland, Ont.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited. Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS AND CLOCK MOVEMENTS
The Arthur Pequegnat Clock Co., Berlin, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COFFEE IMPORTERS, Roasters and Manufacturers
C. H. Cochrane & Co., Ottawa, Ont.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd. Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited. Toronto.

*For Display Advertisement See Index, Page 457

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED BOXES
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORRUGATED PAPER
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.
Canadian Wm. A. Rogers, Ltd.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

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FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*Canadian H. W. Johns-Manville Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peck & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
Gurney Foundry Co., Limited, Toronto.
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, house and office
Canada Furniture Mfrs., Limited, Woodstock, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
Gurney Foundry Co., Limited, Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

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JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Toronto.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MEATS, canned
The Wm. Davies Co, Ltd., Toronto.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement See Index Page 457

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co,, Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A, Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

*For Display Advertisement See Index, Page 457

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS. iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co, London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERWARE
Toronto Silver Plate Co., Limited, Toronto.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*For Display Advertisement See Index, Page 457

Vol. XVII., No. 5 SEPTEMBER, 1916 $2.00 per Year

INDUSTRIAL CANADA

COLUMBIA

THE GEM OF THE MUSIC MAKERS

GRAFONOLAS as Well as COLUMBIA RECORDS Are Advertised by Us

The whole of the advertising for the Columbia Graphophone Co. in Canada, as well as the advertising done by their jobbers and retailers throughout the Dominion, is prepared and placed through this office.

It has been our pleasure to be associated with the conduct of this campaign during four years; in fact we are just entering upon the fifth year of service.

We believe, upon inquiry, that the Columbia Graphophone Co., or their Ontario jobbers, The Music Supply Co. of Toronto, will give a good account of their experience with us.

J. J. GIBBONS, LIMITED

General Advertising Agents

MONTREAL
Cables—Gibjay, Toronto

Head Office:
TORONTO

WINNIPEG
Codes—Liebers, ABC, 5th Edition

PUBLISHED BY THE CANADIAN MANUFACTURERS ASSOCIATION INCORPORATED.
HEAD OFFICE BRANCH OFFICES

MALLEABLE IRON CASTINGS

The Pratt & Letchworth Company Limited

BRANTFORD ONTARIO

AUTOMOBILE PARTS
DROP FORGINGS



SHEET METAL WORK
GENERAL STAMPINGS

We have erected and are now operating

THE LARGEST COMMERCIAL DROP FORGE PLANT IN CANADA

We are equipped to handle large forging contracts.
This expansion also increases our stamping facilities.
We stand by our Motto: Quality and Service.

DOMINION FORGE & STAMPING CO., LIMITED
Walkerville - Ontario

"PEERLESS" GASOLENE

Superior quality, differs from all others, gives greatest mileage. Sold in Tank Cars, Drums and Barrels, also by Tank Wagon.

BRITISH MOTOR GASOLENE

Not equal to Peerless in volatility or staying powers, but so good that many customers never ask for better. Sold in Tank Cars, Drums and Barrels, also by Tank Wagon.

FORD MOTOR OIL

A Lubricant perfect in all its requirements for use in all Ford Cars. Sold in Barrels, ½ Barrels, Cans and Tins. Special Lithographed Tins made to go under seat of Cars.

"AUTOLENE"

Very highest quality non-carbonizing, cold-proof Motor Oil, made in light, medium and heavy grades for all cars. Sold in Barrels, ½ Barrels, Cans and Lithographed Tins.

VULCAN BENZINE

Sold in Tank Cars and Barrels.

LAMP OILS

"Venango Special," "Electrolene," "Lampolene," and "Petrolene." All these burning oils are of great merit. Sold in Tank Cars and Barrels (Car Loads or Less), also by Tank Wagon.

VULCAN LUBRICATING OILS

Cylinder, Engine, Machine, Dynamo, etc., for all makes of Motors, Steam and Electric plants. Sold in Tank Cars, Barrels, ½ Barrels, Cans and Lithographed Tins.

VULCAN GREASES

For all purposes. Sold in Barrels, ½ Barrels, and Lithographed Pails and Tins.

BRITISH METAL POLISH

Sold in Cans and Lithographed Tins, all sizes.

VULCAN ASPHALTIC ROAD OILS

Eminently satisfactory. In three grades. Sold in Tank Cars and Barrels.

FUEL OIL, PARAFFINE WAX, PETROLEUM COKE, Etc.

THE BRITISH AMERICAN OIL CO., LIMITED

Refiners: Foot of Cherry Street, Toronto

HEAD OFFICE: ROYAL BANK BUILDING, TORONTO

BRANCHES: MONTREAL OTTAWA LONDON WINDSOR, Etc.

CRACK THE WHIP

you remember proved disastrous for the fellow who hadn't made sure of his connections in the line. Pipe couplings work just the same way. You can bank on

DART UNION PIPE COUPLINGS

staying on and always being tight.

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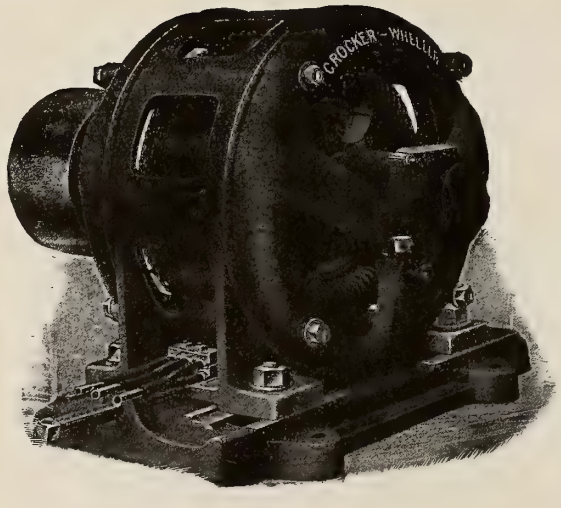
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THE DESIGN OF

CROCKER-WHEELER INDUCTION MOTORS

INCLUDES:

Heavy Shafts

Large Journals

High Power Factor

Excellent Efficiency

They have many other desirable features; Bulletin 155 describes them.

THE CANADIAN CROCKER-WHEELER CO., Limited

MANUFACTURERS AND ELECTRICAL ENGINEERS

Head Office and Works: St. Catharines **District Offices: Montreal, Toronto, Vancouver**

Are You Personally Overseeing

the work in all the departments of your factory? You could do this when your factory was small and your workmen few. You got good results from it, too.

It is a physical impossibility to visit the different parts of your business now. You can get the same results, however, and the same efficiency by installing a

Factory Telephone System

PRESTO-PHONE

It does not need a central operator.

This system is simple, quick, direct, and it does not get out of repair.

Write for Booklet

Canadian Independent Telephone Co., Limited

263 Adelaide St. West : : TORONTO

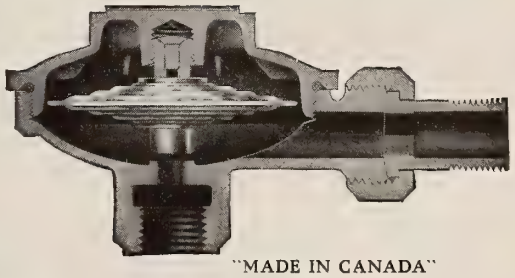


A PRESTO-PHONE DESK SET

The DUNHAM
VACUUM HEATING SYSTEM

There is a reason for individual radiator efficiency and low operating costs beside many other desirable advantages in "Dunham Systems of Heating."

It is through the use of DUNHAM RADIATOR TRAPS. The little trap with a large capacity for getting rid of heating troubles. No water or air held in the radiator and no steam allowed to pass (essentials to good heating) when a Dunham Trap is used.



"MADE IN CANADA"

No pounding noises or sizzling air valves to annoy.

"DUNHAM" is commonsense heating for Industrial Plants and Office Buildings.

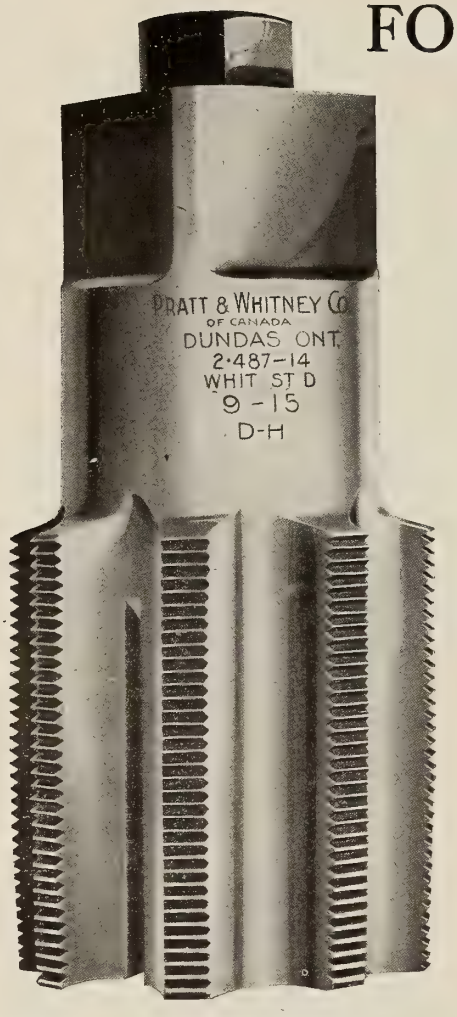
We are ready to advise the most suitable for your needs, whether you are changing your present plant or building a new one. Let us hear from you now.

C. A. DUNHAM CO., Limited, Toronto, Canada

OTTAWA—214 Booth Building
HALIFAX—Eagar, Coombs & Co., Ltd., McCurdy Building
MONTREAL—Room 20, 11 St. Sacrament Street
VANCOUVER—520 Duncan Building
WINNIPEG—405 Tribune Building

ADJUSTABLE TAPS

FOR Shrapnel and H.E. Shells



ON hard, tough shell steel, solid taps are too expensive as the excessive wear quickly puts them below gauge size.

The simple adjustment on the tap, shown in our cut, was gotten out to overcome the effect of this excessive wear and to provide an economical substitute for the expensive chaser tap.

The accuracy to size and form is easily maintained and the life of the tool prolonged far beyond that of a solid tap at a comparatively small advance in price.

We can supply them for all tapping operations on Shrapnel and H.E. shells to 4.5" diameter.

Ask for our list and prices of Shell Tools
Reamers, Taps, Dies, Cutters

If you have not received our No. 8 catalogue yet, we have one for you.

PRATT & WHITNEY CO.
of Canada, Limited
Dundas : Ontario

MONTREAL
723 Drummond Bldg.

WINNIPEG
1205 McArthur Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

LATHES and Attachments

for the manufacture of

This Equipment is all New, Modern and Heavy

Write or wire our nearest office for particulars

EARLY DELIVERY

6", 8" and 9.2 HIGH EXPLOSIVE SHELLS

THE JOHN BERTRAM & SONS CO. LIMITED

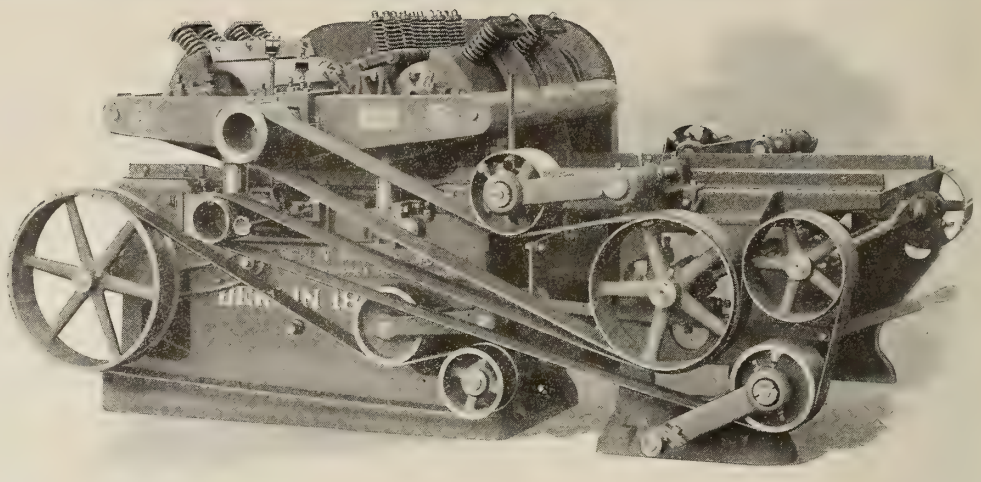
DUNDAS, ONTARIO, CANADA

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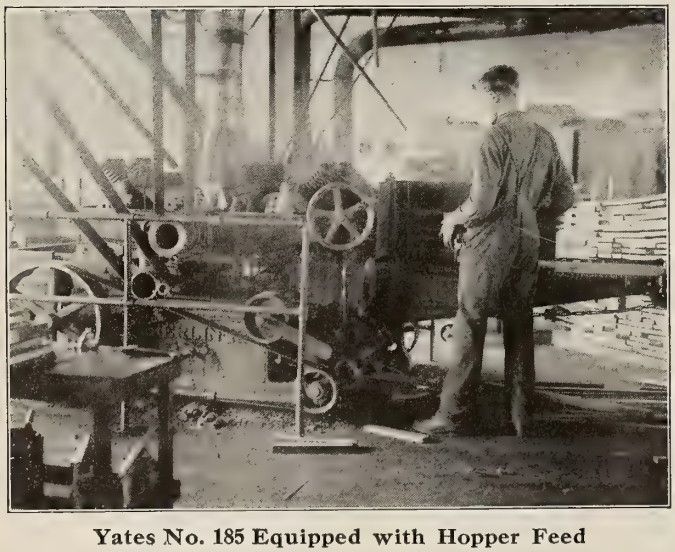
Are You Getting the Utmost Return From Your Surfacers ?



OUTPUT, Quality, Upkeep and Convenience considered, are your surfacers doing as much for you as would this specially constructed

Yates (formerly BERLIN) No. 185 Box Factory Surfacer ?

Are your surfacers adapted equally well to thick and thin stock? Can they give a high, cabinet finish when occasion demands? Are they equipped with time and metal saving, grinding and jointing devices that keep the knives conditioned without removal from the head? Are the feed rolls driven by long-lived, roller-bearing chains or through gear trains of uncertain life?



Yates No. 185 Equipped with Hopper Feed

Do the cutter-head arbors run in automatic take-up boxes that eliminate babbitting and burn-out delays?

These are fundamentals that really determine whether a surfacer shall give the highest possible return for the investment in labor and equipment, or merely a nominal profit. These are the things that have been given careful consideration by the designers of Yates Box Factory Surfacers.

The Yates No. 185 Double Surfacer is furnished with or without Hopper Feeding Device, adapting it to surfacing stock in original or short lengths.

Stock equalized in the rough may be surfaced with an economy closely approaching that of mill length material.

The profit paid by your entire plant is the resultant of the profits of each operation. Surfacing operations are often performed with a narrow margin of profit. Install a Yates No. 185 and make that profit certain.

Ask for Circular "185" and Special Pamphlet, "Putting the Spur to Box Making"

P. B. Yates Machine Co. Ltd.

HAMILTON, ONT. CANADA

U.S. Plant, Beloit, Wis.

Government Selects Paroid

The Canadian Government was in the market for roll roofing for military construction work. The choice of the Government may well be a guide to you when you require a roof that will give the best of service, at the right cost, on your factory buildings.

Camp Borden, Hamilton Barracks, Halifax Barracks—all these are outstanding recent examples of Canada's military construction work, and for each undertaking

NEPONSET Paroid ROOFING

was selected.

18 years' satisfactory service has put Paroid in the front rank of ready roofings, assuring satisfaction to all who use it. Paroid has proven its adaptability to meet the severe needs of the Canadian climate — it is weatherproof and will not split, crack, dry out, or run in the hottest sun. It is a most carefully constructed roofing in which extra good felt, and the best asphalt are deciding factors.



"Look for the Paroid Roll"

When you are contemplating building, decide on Paroid for the roof, specify it plainly, and see that it is used—look, yourself, for the Paroid roll as shown.

Paroid is made in three colors–grey, green and red–any one of which offers real protection against fire.

Write for the booklet "Repairing and Building."

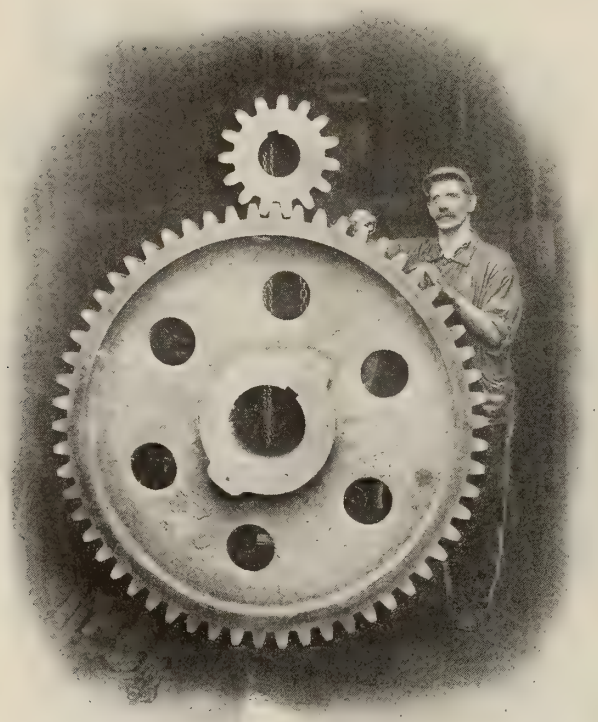
BIRD & SON, Dept. I, HAMILTON, ONT.

The Largest Manufacturers of Roofing, Wall Board and Roofing Felts in Canada

Warehouses: Montreal, Winnipeg, Calgary, Vancouver Edmonton, St. John

CUT GEARS

CUT GEARS



THESE HEAVY HIGH SPEED SPUR GEARS, FOR ESPECIALLY SEVERE REQUIREMENTS, WERE A RECENT RUSH ORDER.

Write Us for Quotations.

Hamilton Gear & Machine Co.

COR. CONCORD & VAN HORNE TORONTO

DU PONT FABRIKOID

CRAFTSMAN QUALITY

For Distinctive Furniture

Is the Choice of the Leading Makers of Upholstered Furniture

FOR over-stuffed pieces and upholstered styles of whatever period or design, Craftsman Quality ranks with the expensive grain leather in elegance and service.

Make Craftsman Quality your standard upholstery material and secure "Quality" at a reasonable cost to yourself and your trade.

Samples in all grains and colors sent on request of this Made-in-Canada Product.

DU PONT FABRIKOID CO.

TORONTO CANADA



MADE-IN-CANADA

Toronto, Ontario

Mr. Manufacturer:—

Are you sincere in your desire to boost and make greater the British Empire by the buying of Canadian made goods? If so, look over the following list of high-grade oils, greases, compounds and paints manufactured in our oil refinery at Petrolia and our paint works at Toronto, Ontario. A postal card from you will bring you full information regarding the goods in which you are interested.

CYLINDER OIL
ENGINE OIL
MACHINE OIL
DYNAMO OIL
TANNER'S OIL
BLACK LEATHER OIL
PARAFFINE WAX
MINERAL SOAP STOCK
BENZINE

CANADIAN OIL COMPANIES LIMITED
Quality First
NATIONAL BRANDS

WHITE LEAD
READY MIXED PAINT
COLORS IN OIL
VARNISHES
BLACK JAPANS
STEEL BRIDGE PAINTS
ROOFING PAINTS
CUP GREASE
LINSEED OIL SOAP

THE OPPORTUNITY OF
The Western Market

MORE than 134,000,000 bushels of grain of the crop of 1915 have been marketed to date at Canadian Northern Railway points in Manitoba, Saskatchewan, and Alberta.

This season the prospect of a good yield in the vast territory served by the Canadian Northern Railway is again bright.

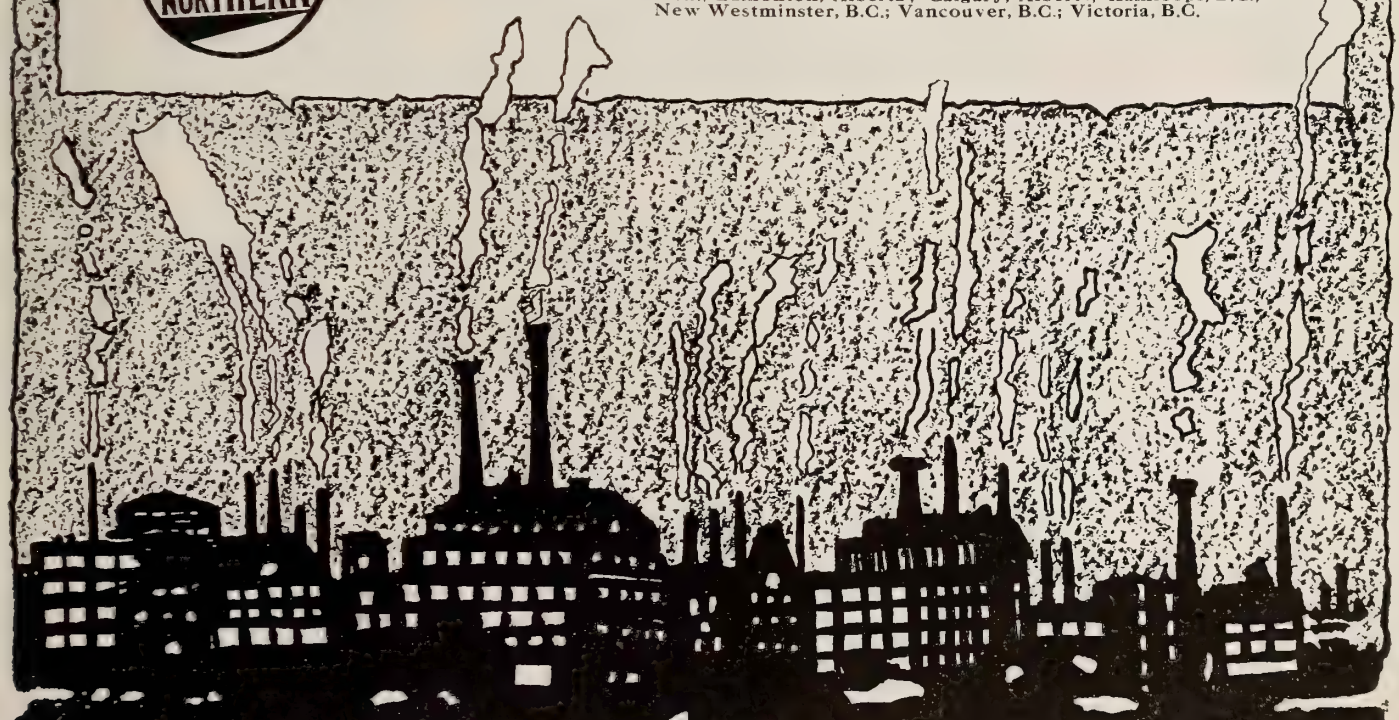
The price which prevailed during the distribution of the crop of 1915 was high, and the farmer was able to liquidate most of his outstanding obligations. The price for the output of this year should be at least equal to that of last, but the distinction is that the bulk of the funds above expense will be *net* to the producer.

The grain grower along the Canadian Northern should soon be seeking to purchase the commodities which the manufacturer in Eastern Canada can supply. The Canadian Northern is the direct line of communication between the factory and the farm. It reaches practically all points of importance in the prairies through a network of more than 6,000 miles of railway. With flat tracks and easy grades between the east and west, it stands prepared to move your products with safety and despatch *all the way*.

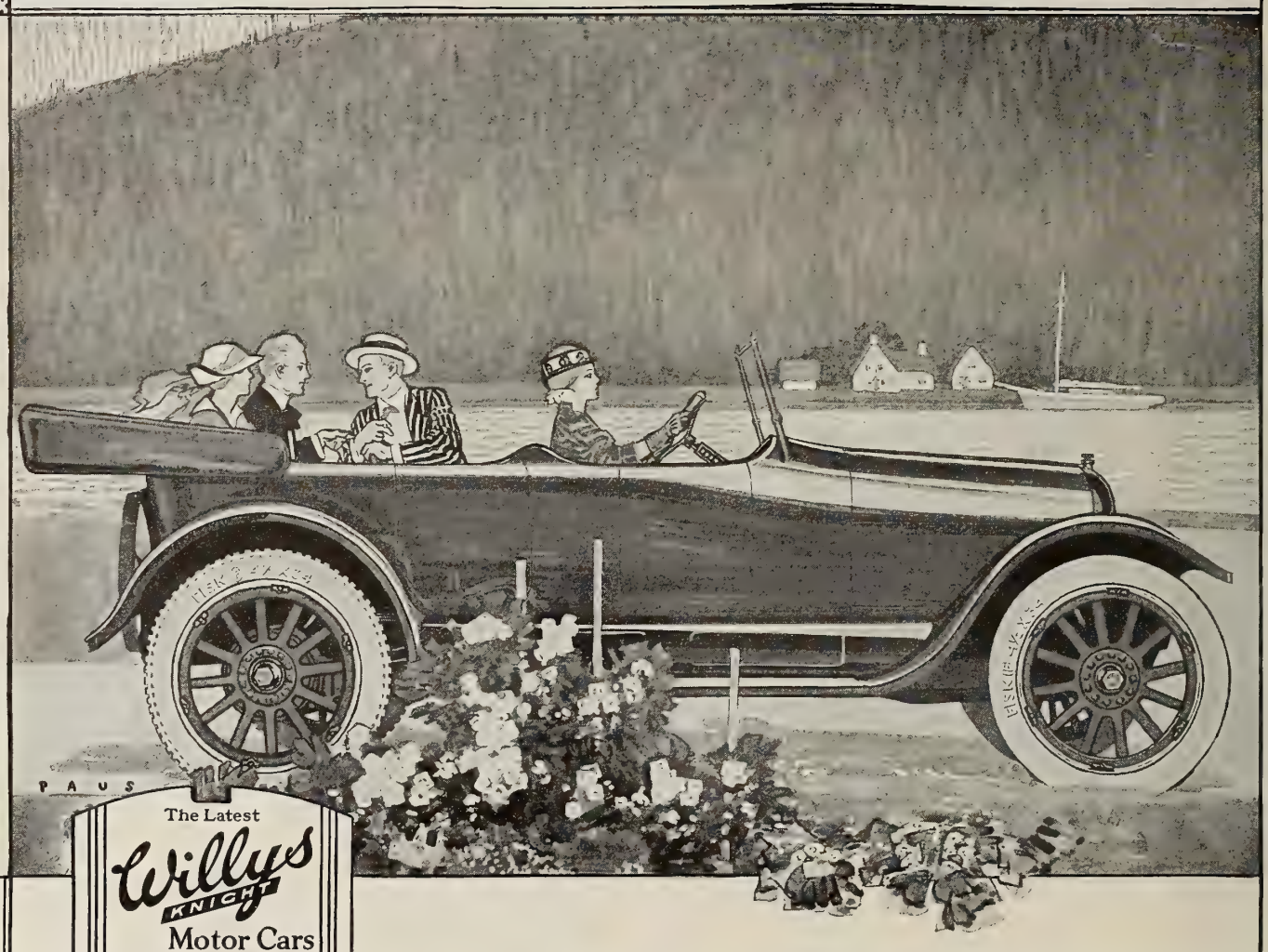
CANADIAN NORTHERN

Test Canadian Northern Service

Principal Offices at: Halifax, N.S; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



Ship
CANADIAN NORTHERN
all the way



The Latest
Willys Knight
Motor Cars
Sleeve-Valve Motor
Model 88-4
$1800
F.O.B. Toronto

Reviewing a Great Success —and Its Successor

Just about one year ago the whole country was sitting on edge in anticipation of our introducing the sleeve-valve Knight motored car.

Everyone knew that practically all of the leading European car manufacturers had adopted the sleeve-valve motor in preference to all others. Everyone knew of its wide and sweeping success.

So they patiently waited.

In Europe the Knight motored cars had been selling at from $4000 to $8000.

But it had been rumored that we would offer a Knight motored car at a price that would be revolutionary.

So thousands of people who were on the verge of buying other cars—waited.

From our initial announcement alone our production was oversold for six months.

Then came the Willys-Knight announcement.

As the new Willys-Knight car went into use and the remarkable ability of the motor received actual demonstration, thousands and thousands of additional orders continued to pour in.

The smoothness of operation; the practical elimination of gear shifting; the absence of carbon troubles; the giant power, coupled with extreme quietness; its economy and all around simplicity immediately established a new standard of motor car efficiency.

Brief Specifications

New double cowl body.
40 horsepower four-cylinder sleeve-valve motor.
121-inch wheelbase.
Seven-passenger seating capacity.
34 x 4½-inch tires—non-skid rear.
Cantilever rear springs.
Auto-Lite starting and lighting system.
Electric switches on steering column.
Vacuum tank fuel feed.
Gasoline tank in rear with gauge.
Moto-meter.

Catalog on request. Please address Dept. 828.

Willys - Overland, Limited
Head Office and Works, West Toronto, Ont.



The Latest
Willys Knight
Motor Cars
Sleeve-Valve Motor
Model 88-4
$1800
F.O.B. Toronto

Greater Size and Beauty —a Mechanical Marvel

On all sides people were astounded at the Willys-Knight performance.

So that to-day the Willys-Knight motor car is pointed to and conceded to be one of the great substantial successes of the industry.

With considerable gratification we now make another Willys-Knight announcement.

Of the sleeve-valve motor we need say but little. In the hands of tens of thousands of owners it has stood up and delivered far in excess of any of our descriptions or claims.

Probably the most distinguished feature of the new Willys-Knight is the striking body design.

The body is much longer—and lower. It has that fashionable double cowl feature. The new harmonious and graceful lines now make the Willys-Knight one of the most attractive motor cars of the year.

The wheel base has been lengthened to 121 inches.

It now seats seven passengers.

The rear springs are now cantilever—the easiest riding springs in the world.

The quiet spiral bevel drive gears are continued.

Finished in rich French Blue with battleship gray wheels, and highly polished aluminum fittings, this newest Willys-Knight is now one of the country's smartest motor cars.

Demonstrations now.

Catalog on request. Please address Dept. 828.

Willys - Overland, Limited

Head Office and Works, West Toronto, Ont.

National Motor Trucks

Well named! for they are recognized as the National Trucks of Canada. Although it is less than two years since the first National Truck was built, the dependable service of the first Trucks has brought unsolicited orders from Big Concerns who always buy to the best advantage. In competition with other makes, National Trucks have sold entirely on merit.

The National Truck is built to the specifications of the British War Office and is guaranteed ***for one year.*** Defective parts, if any, are replaced free of charge. This is only one feature of National Service that ***follows*** after the sale is made.

The National Catalogue is a compilation of Motor Truck facts. Send for a copy.

National Steel Car Company, Limited

Montreal Office :
SHAUGHNESSY BLDG.

Works and Operating Office :
HAMILTON, CANADA





New Prices August 1, 1916

The following prices for Ford cars will be effective on and after August 1st, 1916

Chassis	$450.00
Runabout	475.00
Touring Car	495.00
Coupelet	695.00
Town Car	780.00
Sedan	890.00

f.o.b. Ford, Ontario

These prices are positively guaranteed against any reduction before August 1st, 1917, but there is no guarantee against an advance in price at any time.

Ford Motor Company of Canada
Limited
Ford, Ontario

Assembly and Service Branches at St. John, N.B.; Montreal, Que.; Toronto, Ont.; London, Ont.; Winnipeg, Man.; Saskatoon, Sask.; Calgary, Alta.; and Vancouver, B.C.



THE NATIONAL-ACME
Manufacturing Company

Makers of Screws, Nuts, Studs and Hexagon Brass Nuts in Standard threads and sizes. Also Special Screw Machine Work from Iron, Steel and Brass Bars up to $2\frac{1}{4}$" diameter and $10\frac{1}{2}$" long at

MONTREAL, P.Q.
De Courcelles & G.T.R., St. Henri



Reduce the Cost of Handling Material



Did you ever consider the number of pieces of material that require the strength of two or more men to handle? Figure it out and then think how much it costs for the time of men doing this handling.

Ingersoll-Rand Air Hoists

attached to trolleys running on jib cranes or "I" beam runways will handle with ease several tons. They are simple and reliable with control so sensitive that the load may be raised or lowered a fraction of an inch.

Send a card for full information.

CANADIAN INGERSOLL-RAND CO., Limited

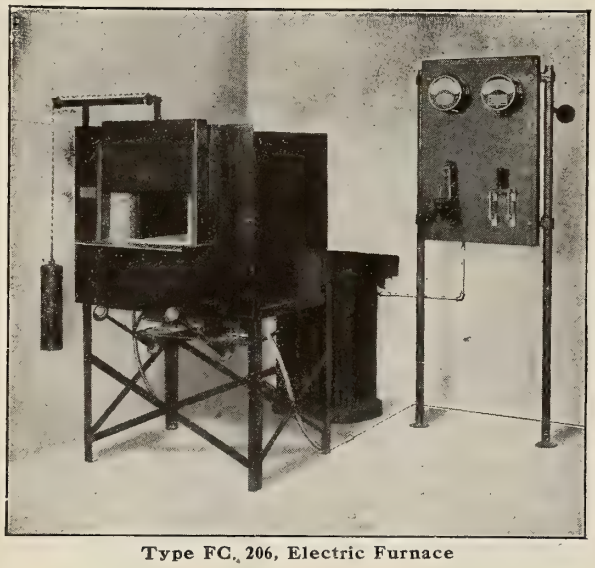
COMMERCIAL UNION BUILDING, MONTREAL, CANADA

Works : SHERBROOKE, QUE.

Sydney · Toronto · Cobalt · Timmins · Winnipeg · Nelson · Vancouver

HOSKINS' ELECTRIC GAS OIL FURNACES

INSURE YOU GETTING THE MOST SERVICE FROM YOUR HEAT-TREATING DEPARTMENT



Type FC., 206, Electric Furnace

High-speed production, heavy duty machines, the high cost of steel and the big loss from shut-downs, demands the highest efficiency in heat-treatment. By using HOSKINS' FURNACES in your heat-treating plant you can obtain exact temperature control and absolute uniform heating, thus eliminating scaling, shrinking and warping of tools.

We are now in a position to install your complete heat-treating equipment. Our Engineering Department will study your heat-treating operation and suggest the most suitable furnaces to insure maximum production at minimum cost, whether electric, gas or oil. Write our nearest Sales Office.

CANADIAN HOSKINS LIMITED

ELECTRIC, GAS AND OIL FURNACES AND PYROMETERS

Sales Offices
MONTREAL and TORONTO
224 St. James St. Traders Bank Bldg.

General Office and Factory
WALKERVILLE, ONT.

NOW MADE IN CANADA "STELLITE" CONTAINS NO STEEL

The Metal Par Excellence for Cutting Steel and Cast Iron at High Speeds

The Advantage of the Stellite tool is twofold. First, it will do from 20 to 100 per cent. more work in a given time than a steel tool of the same dimensions, working under the same conditions. It takes bigger cuts at a higher speed than any tool steel; second, it does not require so much grinding, and thus utilizes the time of the operator at the machine instead of at the emery wheel.

The Reason the Stellite tool cuts so much faster than steel is because the Stellite tool is able to cut continuously at a much higher temperature than any steel tool; it will not burn, and the temper stays in the tool. Sometimes the speed of a lathe becomes so great that the edge of the Stellite tool will become visibly red, and remain so during an entire cut without the slightest injury.

Stellite is to the best high-speed steel what high-speed steel is to ordinary steel.
Costs more at the beginning, but is by far the cheapest and most profitable in the end.

MADE IN CANADA BY

Deloro Mining & Reduction Co., Limited

DELORO, ONTARIO — C.P.R. BUILDING, TORONTO, ONTARIO

Sold exclusively in Canada and Newfoundland by **THE CANADIAN B. K. MORTON COMPANY, LIMITED**

49 Common Street, MONTREAL, P.Q. — 86 Richmond St. East, TORONTO, ONT. — Full particulars and price on request.

CASTINGS

WE HAVE EXCELLENT
FACILITIES FOR
ECONOMICAL
QUANTITY
PRODUCTION
OF CASTINGS IN
BRASS, BRONZE
AND COPPER

We Save You Money

Contracts Accepted
on Sliding Scale

Kinzinger, Bruce & Co., Ltd.
NIAGARA FALLS . ONT.

Brass, Phosphor Bronze, Copper and Aluminum Castings

We have the largest Jobbing Brass Foundry in Canada

Can Make Prompt Delivery

Write For Prices

Tallman's Reputation is in the Goods

Tallman Brass & Metal Co.
HAMILTON, ONT.

MALLEABLE IRON CASTINGS

HIGH TENSILE STRENGTH

GALT MALLEABLE IRON CO.
LIMITED
GALT ∴ ONTARIO

DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
Limited
Welland, Ontario

JOLIETTE STEEL → CASTINGS

Need Good Steel Castings ?

Try the Joliette kind.

They're made right in every detail.

And they're priced on a cost plus reasonable profit basis that assures perfect quality—always.

Delivered on time, too!

We want to get your future orders by giving you the best value in steel castings that money can buy and a service that will completely meet your views.

After reading this you will expect exceptional service—and you will get it.

Your Inquiry Will Meet With Prompt Attention

Joliette Steel Company, Limited

Works : JOLIETTE, QUE. Office : READ BLDG., MONTREAL, QUE.
TELEPHONE : MAIN 402

STEEL CASTINGS

From MALLEABLE STEEL, MANGANESE STEEL, CROME STEEL, Etc.

STEEL PROPELLER WHEELS
TURBINE WATER WHEELS, MILL GEARING, Etc.

THE WILLIAM KENNEDY & SONS, LIMITED
OWEN SOUND - - ONT.

STEEL CASTINGS

Manganese, Chrome, and Nickel Steel Castings
from $\frac{1}{4}$ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears
any size up to 18 feet in diameter without
the use of patterns

Hull Iron & Steel Foundries, Ltd.

Head Office and Works - - HULL, P.Q.

Toronto Sales Office
205 Yonge Street

Acid Open Hearth Steel Castings
for all purposes

Dominion Steel Foundry Company, Limited

Annual Capacity 15,000 Tons

Hamilton, Ontario

ELECTRIC STEEL CASTINGS

WE CAN SUPPLY

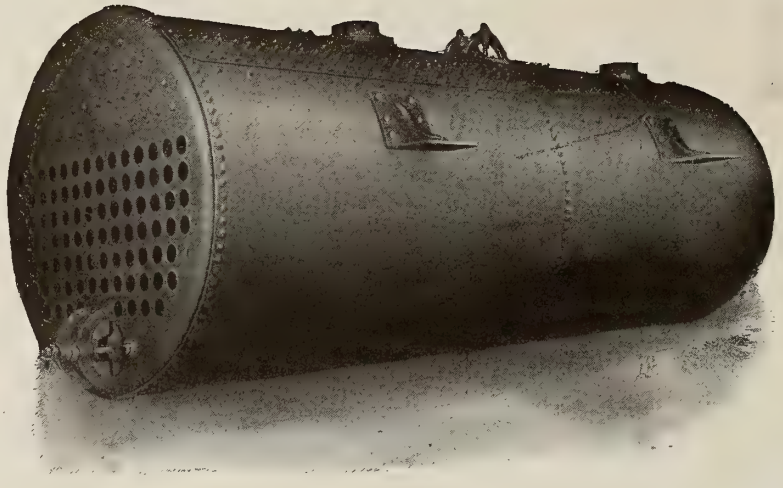
Carbon Manganese, Alloy, Steel Castings
Forging Ingots, Etc.

Write for prices and particulars

The Electric Steel and Metals Company, Limited

WELLAND, ONTARIO

BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

ENGINEERS AND BOILERMAKERS

14 Strachan Avenue **Toronto, Canada**

Ottawa Representative: J. W. ANDERSON, 7 Bank Street Chambers

To the Power User

—and to you who buy transmission equipment for that power—here's what

Dodge Service means:

¶ It means that you have at your command the output of the *largest works in the Dominion of Canada* exclusively devoted to the manufacture of power transmission machinery.

¶ It means that you are able to draw from the *largest stocks* at Toronto and Montreal and at distributing centres from coast to coast.

¶ It means that Dodge machinery is a *complete standardized line,* all parts interchangeable, and you are able to get deliveries at a moment's notice.

¶ Thirty years of engineering and practical experience combined with the largest and most modern manufacturing facilities assures the buyer of DODGE Transmission machinery of a quality in materials and manufacture that cannot be equalled.

Dodge Manufacturing Co., Limited, - Toronto

(8)

Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

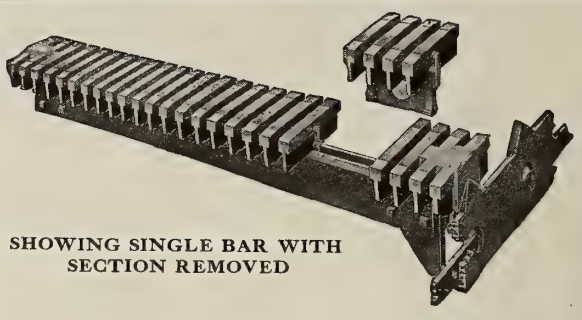
Galt Foundry Co.,
Galt, Ont.

Gentlemen:—

Some months ago we ordered one set of McNaughton Rocking Grates for our No. 1 Boiler. We have been using this continually ever since, and they gave us such good satisfaction, that we followed up the order with two more sets for our No. 2 and No. 3 boilers. We may also add that these are giving entire satisfaction and showing a clean fire at all times.

Yours truly,
(Signature).....

Name of above company on request.



SHOWING SINGLE BAR WITH SECTION REMOVED

A GRATE BAR

that gives universal satisfaction. It is in use in more than one hundred of the biggest plants in Canada.

The McNaughton Rocking Sectional Grate Bar

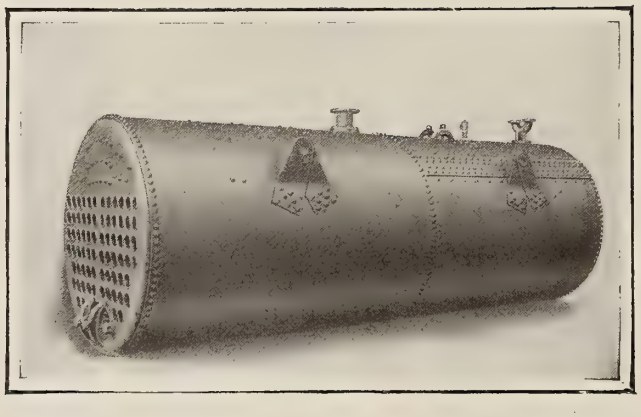
has high efficiency, long life and low repair costs.

Write for Descriptive Leaflet

GALT FOUNDRY CO. - - Galt, Ontario

E. Leonard & Sons, Limited

LONDON - ONTARIO



Manufacturers of

BOILERS
ENGINES

of all types and sizes.

BRANCHES AT

1790 St. James Street, Montreal, P.Q.
Box 1315, Calgary, Alta.
62 Water Street, St. John, N.B.
567 Banning Street, Winnipeg, Man.
Vancouver Machinery Depot, Vancouver, B.C.



Putting the $ in $team

STEAM, after its expansive energy has been exhausted, is not through with its job. There are **live, tangible heat units** left represented by so much coal—gold dollars if you please—at the boiler's mouth.
What are you doing with these units? Are you letting them escape while you spend **more** money for coal in producing useless heat?

His Majesty Mr. Heat Unit

Get Better Acquainted With Him

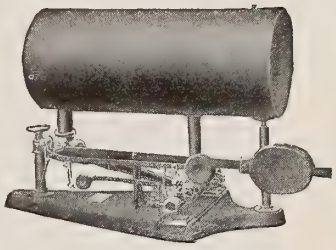
Ask For Morehead Catalog

The *Morehead* **Back to Boiler SYSTEM**

will not only make these valuable heat units do more and better work for you in your steam heating, drying or cooking systems through giving higher temperatures at less cost, but—you can return them—automatically and under pressure—to your boilers as pure, hot feed water. As specialists in "Making Condensation Pay," we invite full and free discussion—without obligation—of your steam handling problems.

Canadian Morehead Manufacturing Co.
Dept. "K"
WOODSTOCK ONTARIO

How About Conditions In Your Plant?



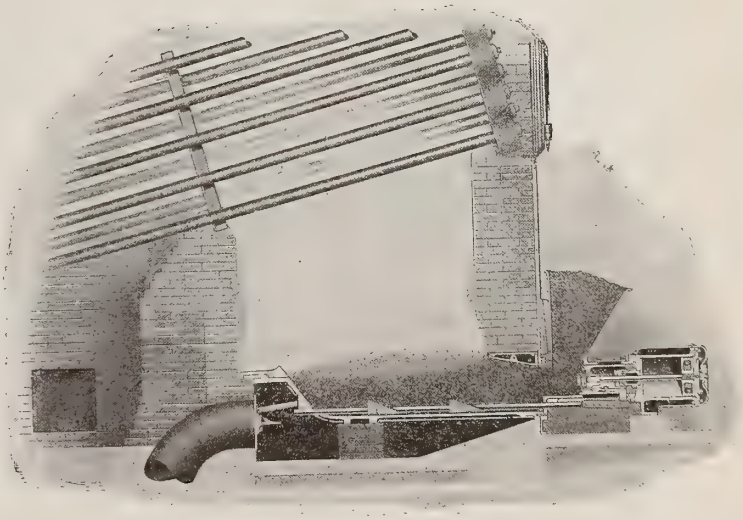
Reducing the Cost of Power

It is after all only a question of getting the maximum heat value out of your coal.

With an unscientific system of stoking a large percentage of your fuel bill is represented by incompletely consumed coal.

If you are still hand-firing your boiler, a

Jones Underfeed Stoker
MADE-IN-CANADA



will save you up to twenty-five per cent. of your coal. It is of simple construction, and it has stood the test of the leading power houses, not only in Canada, but throughout the world.

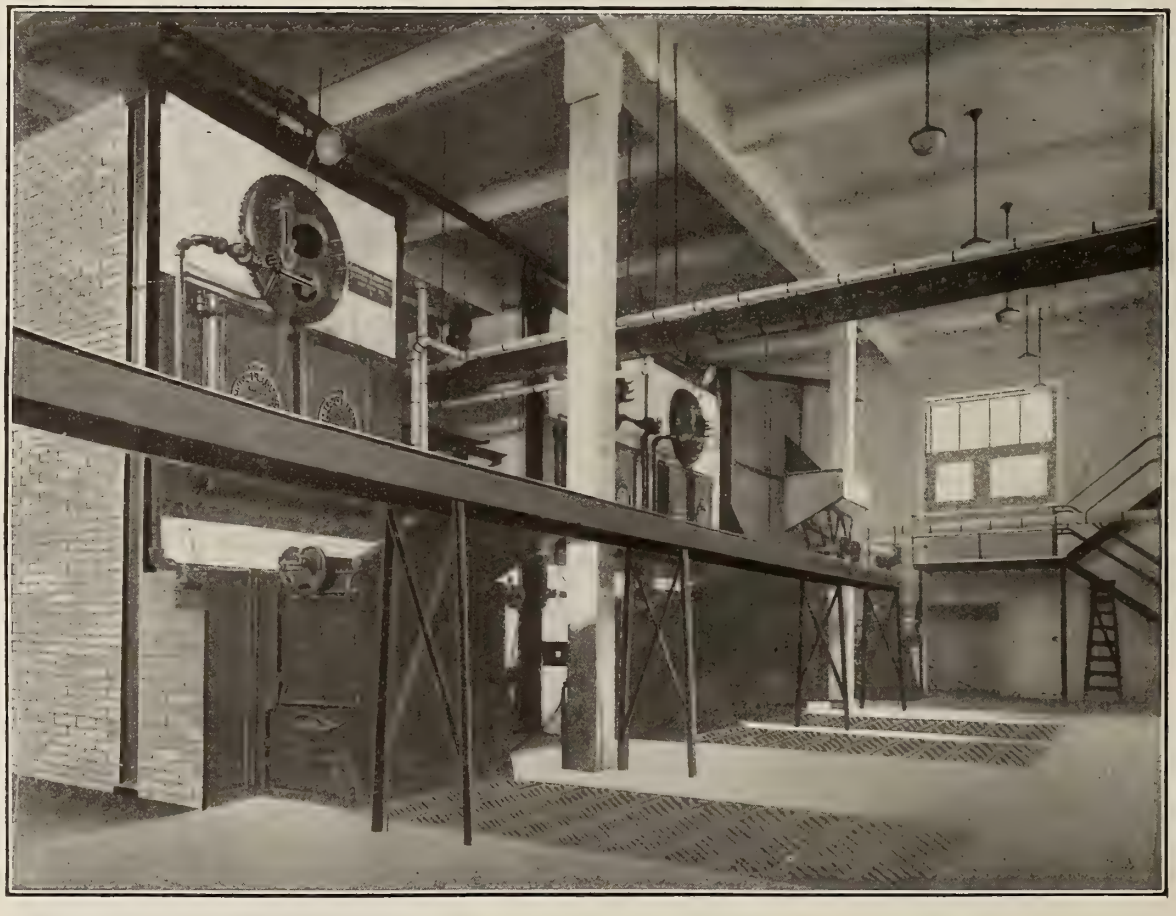
Let us send you a booklet.

JONES UNDERFEED STOKER COMPANY, Ltd.
NATIONAL TRUST BUILDING, TORONTO

POWER EQUIPMENT

Steam Engines and Turbines, Return Tubular and Water Tube Boilers, Heaters, Pumps and Condensers

Built and Designed by Experts with Quality as the First Consideration



Illustrating the Attractive Boiler Room at the B.C. Parliament Buildings, Victoria, B.C., equipped with 3 G. & McC. Water Tube Boilers

The construction of G. & McC. Co. Boilers meets the increasing demand for the highest quality and efficiency

Every Part Subjected to Steam Pressure is MADE OF FORGED STEEL

They Excel in Positive and Rapid Circulation and in Increased Steaming Capacity

Catalogs, Plans and Specifications will be sent upon request

THE GOLDIE & McCULLOUGH CO., LIMITED

Head Office and Works: GALT, ONTARIO, CANADA

TORONTO OFFICE: Suite 1101-2 Traders Bank Bldg.

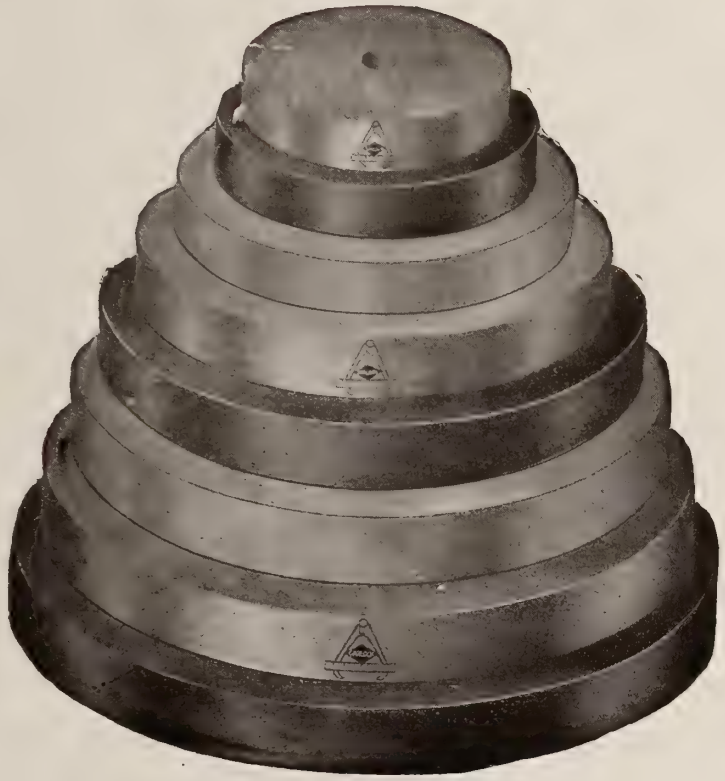
WESTERN BRANCH: 248 McDermott Ave. Winnipeg, Man.

QUEBEC AGENTS: Ross & Greig 412 St. James St., Montreal, Que.

BRITISH COLUMBIA AGENTS: Robt. Hamilton & Co. Vancouver, B.C.

GARLOCK

PUMP VALVES



The service of pump valves depends upon the compounds as well as the consistency and cure of the valves. The compounds used in Garlock pump valves have been established after years of trial in actual service and under the most severe conditions. Pump valves should always be used for the purposes for which they are intended. The following are a few of our leading styles and grades of valves:

Style No. 139—For medium pressure cold water
" " 175—For high pressure cold water
" " 182—For warm or greasy water
" " 108—For hot water
" " 105—For boiling water
" " 154—For air compressors and condensers

We guarantee our pump valves to give satisfactory service when used under conditions for which they are intended.

THE GARLOCK PACKING COMPANY

HAMILTON, ONTARIO

Branches:

Montreal, Quebec ..... 342 St. James St.
Toronto, Ontario.....404 Continental Life Bldg.
Winnipeg, Manitoba ..... Galt Bldg.



MADE IN CANADA

Canadian Hart Wheels

CUT FASTER LAST LONGER

Than any other wheels on the market

Tell us the service you want performed and we will supply you with an abraser that will save you time, money and worry.

Send for one of our catalogues and tell us your troubles. We do the rest. :: :: :: ::

CANADIAN HART WHEELS LIMITED

450 BARTON ST. EAST

Hamilton :: :: :: Ontario

The Canada Metal Co., Limited

Manufacture in Canada

Our Babbitt Metals Give Excellent Service



We are Proud of the Goods We Manufacture

FOR GENERAL MACHINERY BEARINGS

TRY

Harris Heavy Pressure

THE BABBITT METAL WITHOUT A FAULT

WE HAVE EVERYTHING IN METALS

Ask for Our New Catalogue. Mailed FREE on Request

THE CANADA METAL CO., LIMITED

Head Office and Factory, Toronto Branch Factories, Montreal, Winnipeg

YOU CAN INCREASE YOUR POWER WITHOUT INCREASING THE SIZE OF YOUR POWER PLANT

Your present line shafting is consuming from 15% to 60% of your power.

The Chapman Double Ball Bearing will save this waste and turn it into productive energy.

They will also reduce your oiling and attention to a minimum.

They fit any adjustable hanger and the change can be made with but little delay to you.



In use in over 2,000 Canadian Factories

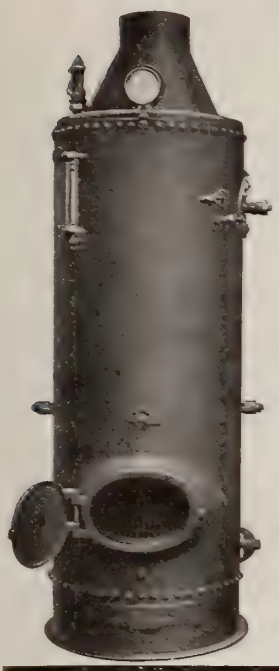
The Chapman Double Ball Bearing Company

OF CANADA LIMITED

339-351 Sorauren Avenue ∴ ∴ Toronto, Canada

WATEROUS BOILERS

For Every-day Service



These boilers are exceptionally well constructed to stand up to the severe service expected of them.

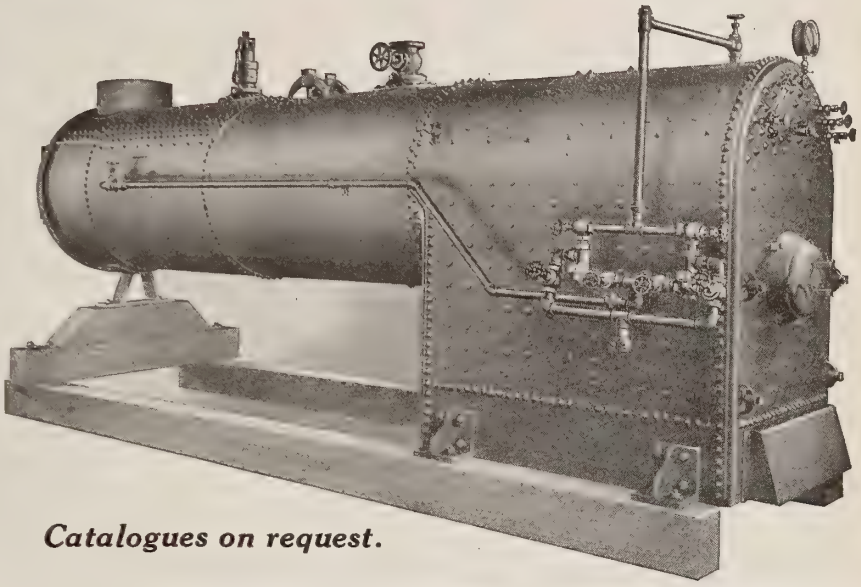
They are quick, steady steamers, are readily transportable, easy to keep in good condition and trustworthy.

Vertical Boilers are built in 11 sizes from 6 to 50 H.P.

Locomotive Boilers on skids or wheels—from 25 to 150 H.P.

All are built to Provincial Regulations and under Government Inspection. They are **better** built than the law requires.

WRITE



Catalogues on request.

The Waterous Engine Works Co., Ltd., Brantford, Can.

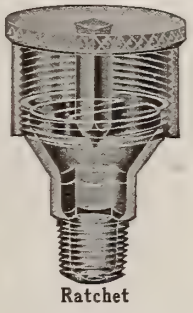
PRESSED STEEL AND BRASS GREASE CUPS OIL HOLE COVERS, OIL CUPS

DOWEL PINS

SMALL STAMPINGS



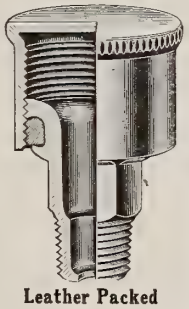
Plain



Ratchet



Style "D"



Leather Packed

Write for Prices and Catalogues

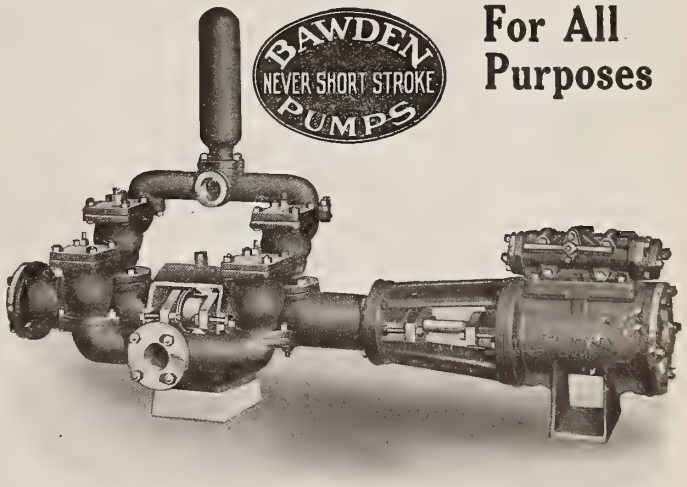
Samples Sent on Application

THE CANADIAN WINKLEY CO. LIMITED

WINDSOR, ONTARIO

BAWDEN PUMPS

For All Purposes



The pumps backed by a grand reputation and the finest installation in Canada.

Bawden Basket Strainers and Pipe Flanges

THE BAWDEN MACHINE CO., Ltd.

133 Sterling Road, Toronto, Canada

ESTABLISHED 1875

The Boiler Inspection and Insurance Co. of Canada

Continental Life Building, Toronto

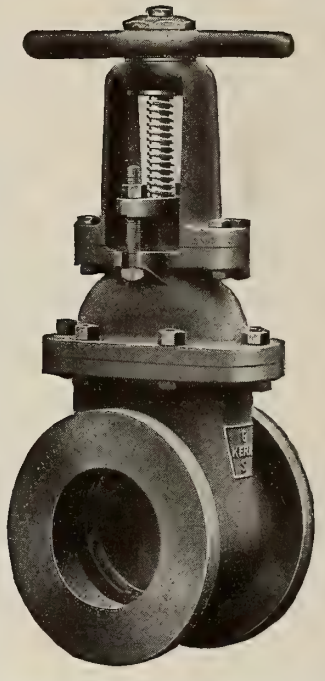
Issues Policies of Insurance after A CAREFUL INSPECTION OF THE BOILERS Covering LOSS OR DAMAGE TO PROPERTY and LOSS RESULTING FROM LOSS OF LIFE AND PERSONAL INJURIES. :: :: :: ::

Policies Guaranteed by THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY. :: :: ::

Assets for Security of Policy-holders, $4,552,020.43. :: ::

JOHN L. BLAIKIE - - - President
H. N. ROBERTS - Vice-President and Sec'y
GEO. C. ROBB - - - Chief Engineer
A. E. EDKINS - - Ass't Chief Engineer

Kerr Iron Body Gate Valves



embody all that is modern in gate valve construction. Strong, compact and pleasing in appearance.

Every valve tested and guaranteed.

THE KERR ENGINE CO., Limited
Valve Manufacturers :: Walkerville, Ontario

John Morrow Screw and Nut Company Limited

INGERSOLL, CANADA



Notwithstanding the extraordinary demands made upon us for special material during the last two years, it has been our policy to reserve Machines so as to take care of our regular customers requiring standard Set and Cap Screws, Nuts, Twist Drills.

We realize that our Canadian customers appreciate our efforts to give them service during these strenuous times, and we would ask our customers to send us all their orders as far ahead of their actual needs as possible so as to assist us in giving them good service.



Ask for the GREEN Drum

CARBIDE

If you purchase CANADIAN Carbide you get the best.

The largest and most modern equipped Carbide works in the British Empire are located at Shawinigan Falls, Que.

We supply Carbide to the Canadian and Imperial Governments.

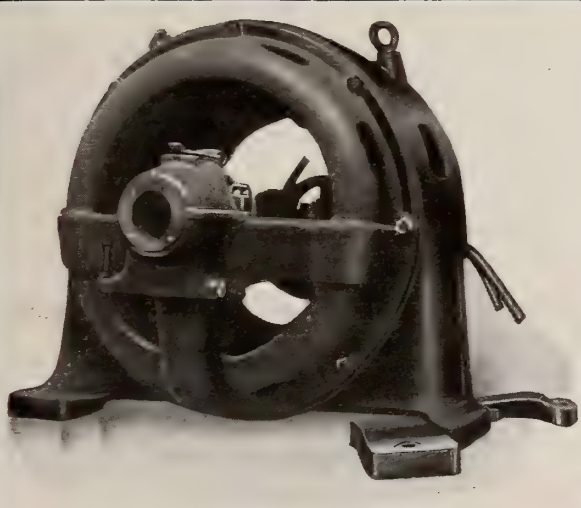
We have over 10,000 satisfied customers in Canada.

If you wish evidence, ask the man next to you who uses Carbide.

Canada Carbide Company, Limited

Head Office : MONTREAL, CANADA

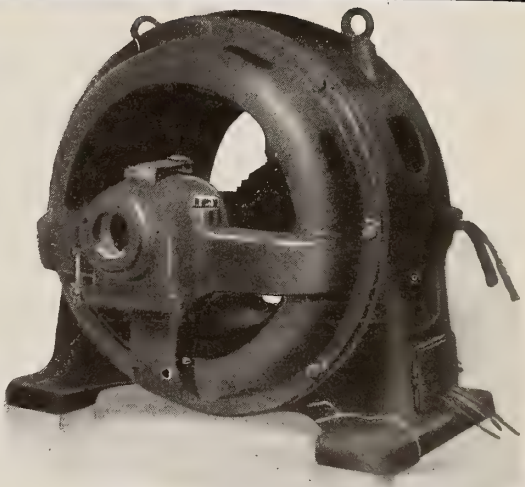
Toronto 23 Scott St. | St. Catharines Ontario | Shawinigan Falls Quebec | Brandon Manitoba



Broken leg of an electric motor.

WHEN TIME IS WORTH MORE THAN MONEY,

and breakage such as the illustration, etc., occurs, remember that the OXY-ACETYLENE Process can make it as good as new. It took but a couple of hours to put this motor in operation again and the cost of repairs was only a few dollars.



The same, after being welded

Welding saves thousands of machines from the junk pile daily, and you certainly can find valuable applications of the process in your works.

Why Not Investigate Into This Process To-day?

We are the pioneers of the Process, and we only supply apparatus which have withstood the test of years of practice.

Our first desire, is our customers satisfied, profits come after.

L'AIR LIQUIDE SOCIETY Oxygen, Welding and Cutting Plants

Paris, France, Toronto, Montreal, Winnipeg and all over the world.

L'AIR LIQUIDE SOCIETY, Montreal, Que.

Gentlemen—Please send without obligation to me your new booklet. (I.C.)

Name.....

Address.....

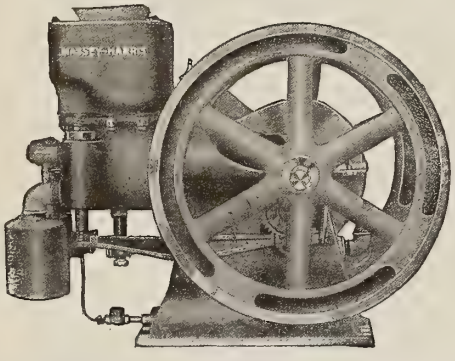
Prov.....

Bus's.....

GASOLINE ENGINES MASSEY-HARRIS PUMP OUTFITS

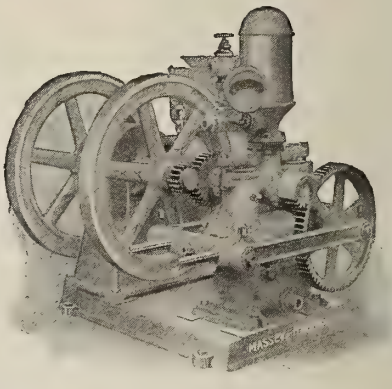
THESE Engines represent the very best type of Gasoline Engine construction. They have been developed to their high state of efficiency by those whose lifework has been the designing and building of Gasoline Engines.

Their high efficiency, coupled with their economy of operation and durability, combine to make Massey-Harris Engines, without exception, the most reliable and satisfactory on the market to-day.



FOR THE CONTRACTOR

Engines, Pumps, Hoists, Dump Wagons, Dump Carts, Dump Boxes, Teaming Gears, Lorries, Grading Plows, Sleighs
ETC.



Stationary or Portable 1½ to 20 Horse Power. Maximum Power with Minimum Consumption of Gasoline.

MASSEY-HARRIS CO. LIMITED

HEAD OFFICES, TORONTO
Branches at: Montreal, Moncton, Winnipeg, Regina, Saskatoon Swift Current, Yorkton, Calgary, Edmonton
AGENCIES EVERYWHERE

Cylinder Pumps and Diaphragm Pumps, Stationary or Mounted on Truck—Reliable and Efficient.

Economy and Accuracy
IN SCREW THREAD GAGING

The upper contact points are set to the maximum size—the lower to the minimum. Lay the screw between the upper points and let it "find its own level." Can anything be simpler?



JUST RIGHT

Varying judgment of individual workmen is entirely eliminated by the use of

WELLS LIMIT GAGES

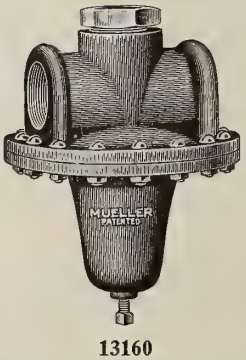
Send us an outline of your requirements. We will plan the gages for your output.

Wells Bros. Company of Canada, Limited
GALT - ONTARIO
Manufacturers of the celebrated *Little Giant* line of
TAPS, DIES and SCREW PLATES, GAGES AND REAMERS

VALVES

For Reducing and Regulating Valves the demands of every condition are met by

THE MUELLER LINE



13160
The 13160 is the greatest all-around valve on the market.

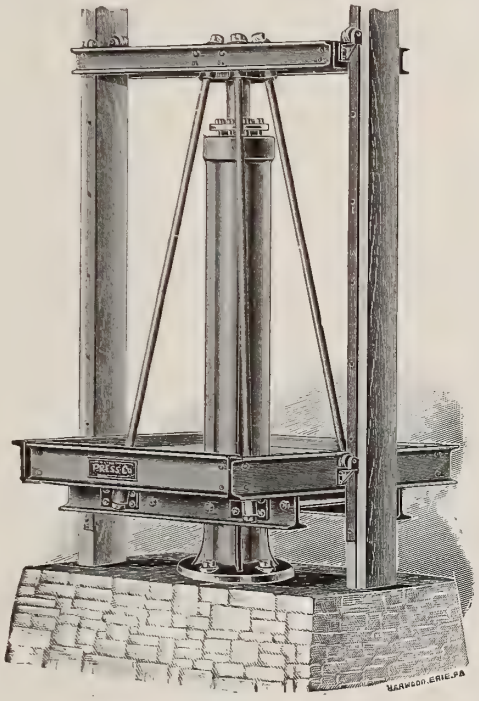
Send for Catalogue No. 5

H. MUELLER MFG. CO., Limited
SARNIA, ONTARIO

HYDRAULIC PUMPS and ACCUMULATORS

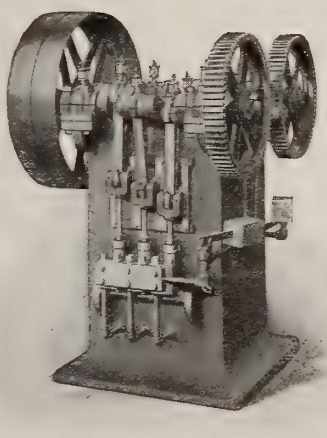
All Sizes and Styles

Accumulators up to 18"x15'

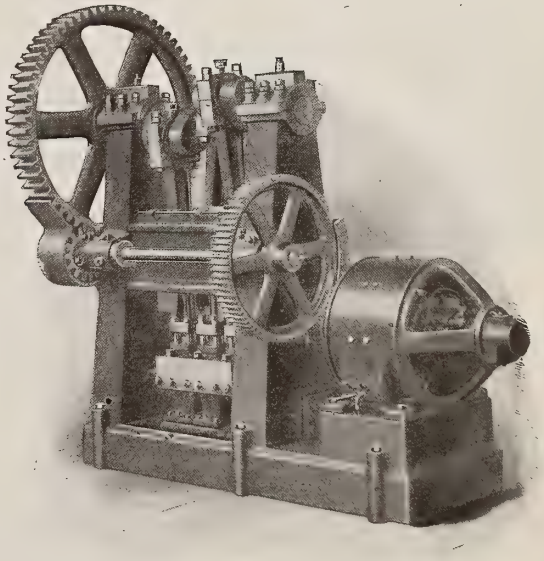


All pressures

Pumps up to 100-gallon capacity



Any pressure desired



Canadian Boomer & Boschert Press Co., Limited

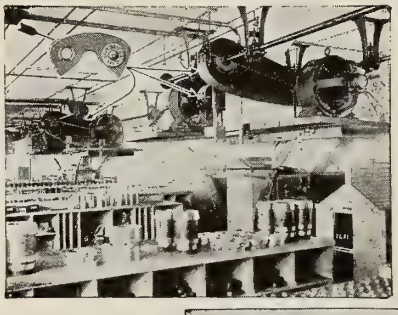
18 Tansley St. ***Cable Address : Pressco*** MONTREAL

LINK-BELT SILENT CHAIN

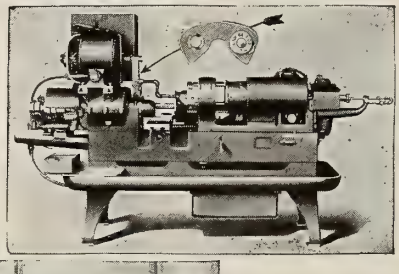
For the transmission of Power without slip or loss.

Built to transmit from ¼ H.P. to 500 H.P. and over. Suited to individual machine drives of small capacity, or large transmissions for operating generators, pumps, etc.

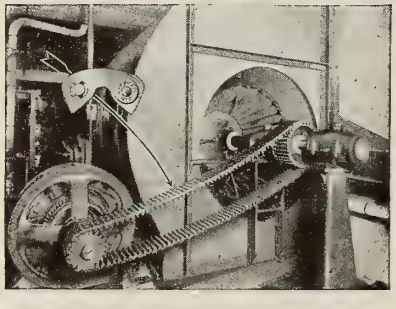
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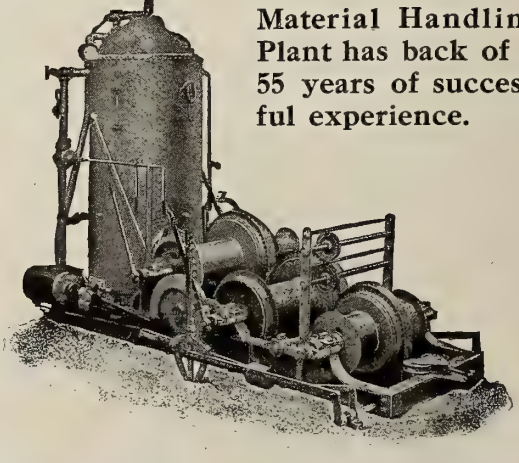
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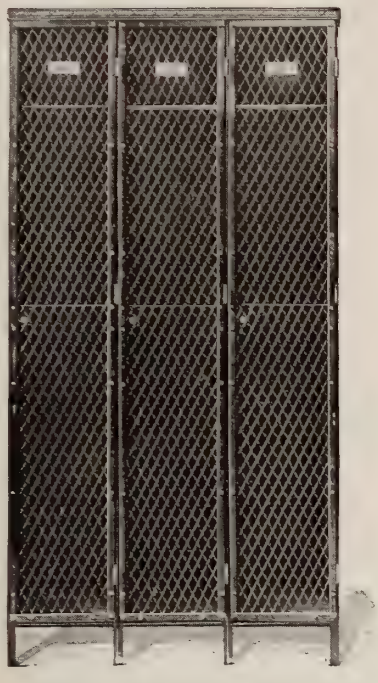
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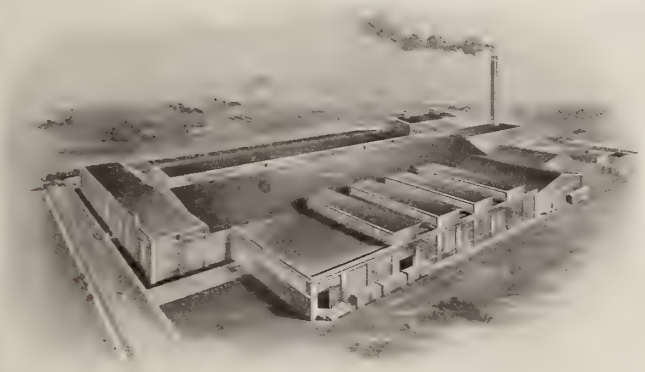
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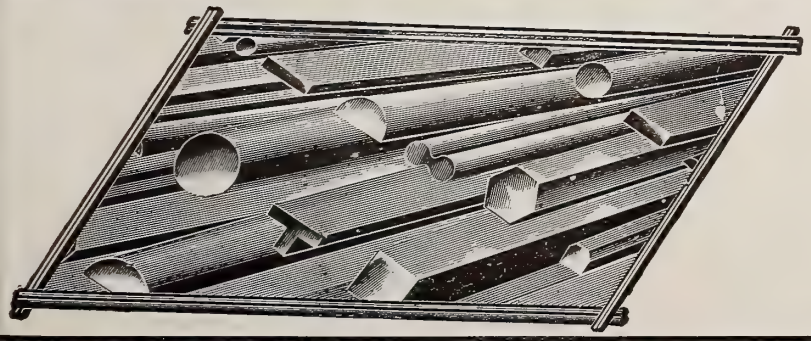
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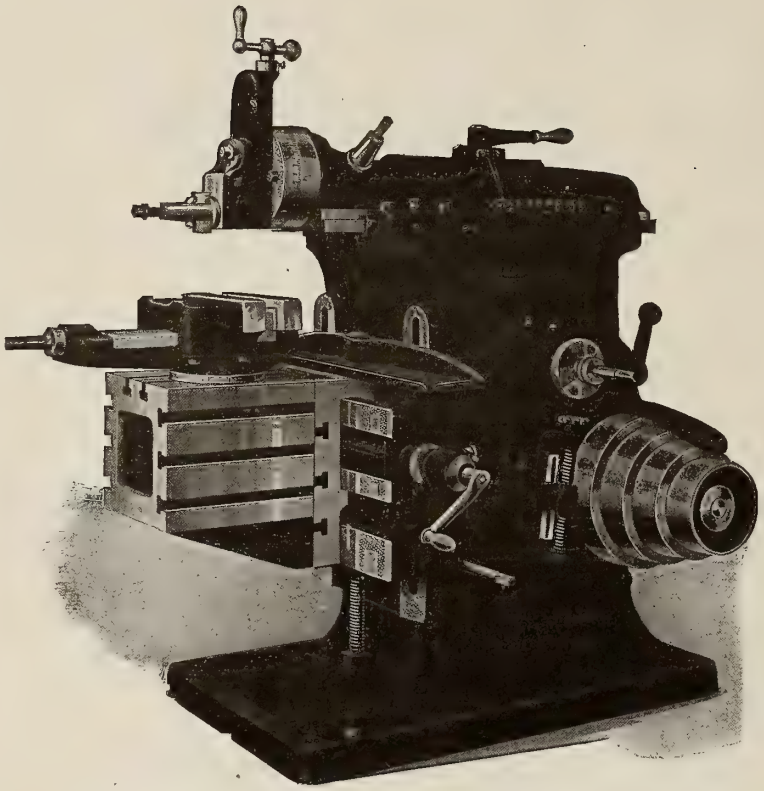
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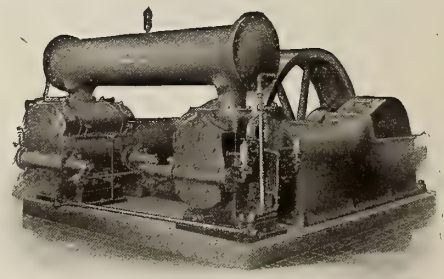
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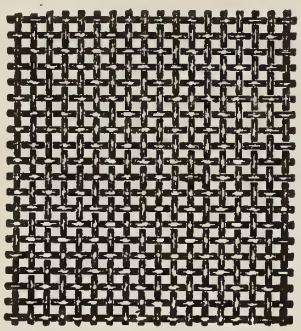
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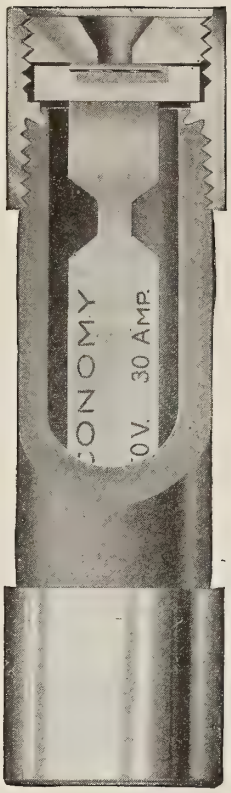
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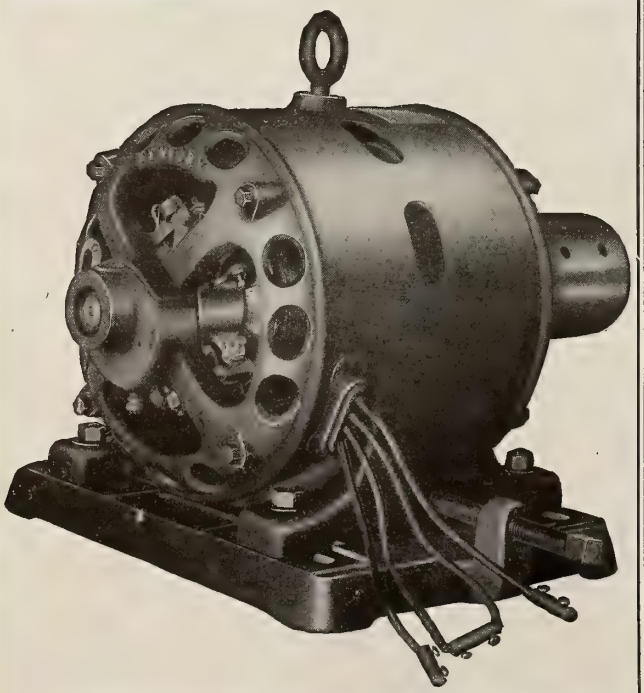
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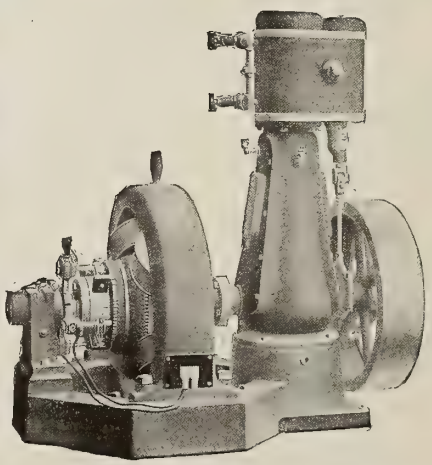


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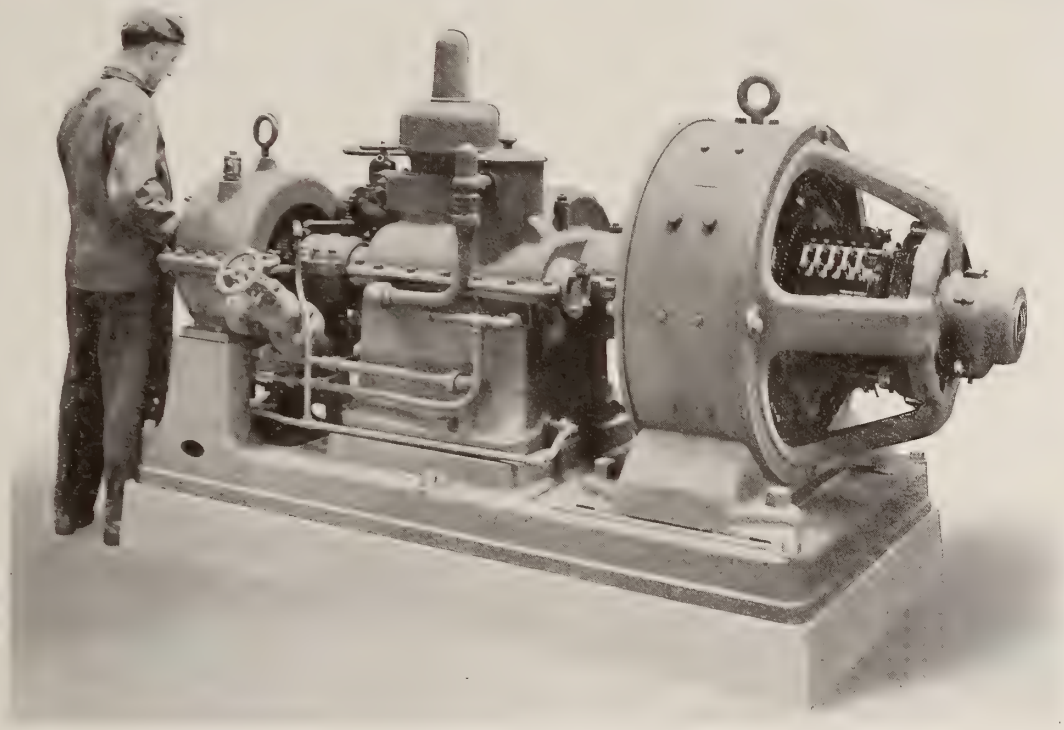
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No Upkeep Cost for 20 Years —*Absolutely Guaranteed*

Here are details of a plan to guarantee your roof for 20 years—*at no extra cost to yourself.*

It's a new feature of our service.

We know from an experience of over half a century that a Barrett Specification Roof, *if properly laid by a good roofing contractor*, will last at least 20 years. Scores of roofs of this type have lasted almost twice that period.

In order that purchasers may have the benefit of this experience we have arranged with one of the largest Surety Companies to issue, hereafter, a 20 Year Guaranty Bond on all Barrett Specification Roofs of 50 squares or more in all towns in the Dominion of 25,000 population and over—*and in smaller places where our Inspection Service is available.*

Our only requirements are that the roofing contractor shall be satisfactory to us and that the Specification dated May 1, 1916, shall be strictly followed.

All you have to do to secure the 20 year Guaranty Bond is to give the roofing contractors copies of The Barrett Specification *of that date,* and tell them to figure on that basis. From the buyer's standpoint the arrangement is practically ideal, for under the plan the owner is assured of having an inspector on the roof whose only interest is to make it *as good as possible*—for if it isn't right we alone are the loser.

Do not confuse this Surety Bond with the ordinary "Guarantee."



Be sure your next roof carries this 20 year Guaranty Bond

It is something quite different. It is issued, not by an individual or a manufacturer, but by one of the largest and best known Surety Companies and is a *legal, workable document that has no loopholes.*

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A copy of The Barrett Specification, with roofing diagrams, sent free on request.

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The CANADIAN MANUFACTURERS ASSOCIATION.

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Vol. XVII. TORONTO, SEPTEMBER, 1916 No. 5

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Wanted—A Statesman.

THE Dominion Government, dawdling away valuable time on a compromise scheme of national registration, which they know very well is going to be ineffective, if not actually barren of results, are just a little bit more ridiculous than the man who locked the stable door after the horse was stolen. The hero of the allegory was at least able to make up his mind, even if he was too late in doing so; the Cabinet, on the other hand, do not seem to be able to make up their mind at all, on some things. The regularity with which they unanimously adopt a motion to temporize almost makes one wonder whether they really have any mind to make up.

The paramount importance of the issues facing Canada to-day makes it clear beyond question that National Service is the one and only safe foundation upon which to build up our organization for the prosecution of the war. With the illuminating spectacle before us of what England is doing, of what France, Russia and our other Allies are doing, we must realize that to content ourselves with doing less than our best is to brand ourselves as slackers. Now Canada is no slacker, as the votes of her people will one day show, but the men who comprise the Government of Canada are slackers of the worst kind if they persist in negativing the desires and efforts of a proud and loyal race that is determined to maintain the traditions of its volunteers who have poured out their life-blood on the battlefields of Flanders.

The thing is so perfectly obvious, so absolutely unanswerable, that in looking for an explanation of the Government's policy of masterful inactivity, one is forced to conclude either that they are utterly incompetent to administer Canada's affairs in this time of crisis, or that they attach more importance to the preservation of their political life than they do to winning the war. It may be a brutal statement to make, but why not be frank about it?

Now the Cabinet as a whole are not incompetent. Better men for the job might perhaps be found, but nevertheless the men who constitute our Government have sufficient brains among them to know what is the right and proper thing to do. Then why don't they do it?

If France, Russia and England, or if any one of them, had fought this war in the same laissez faire manner that Canada is fighting it, we would have had a Von Bissing over here by this time as Governor General. And by the same token, if Canada had had a Lloyd George in its Government, a man who not only knew the right thing to do but who had the courage to go out and do it, regardless of political consequences, we would now be enjoying the unspeakable satisfaction that effective participation in the war would afford us, instead of suffering the disappointments and heart-burnings that a lot of time-serving opportunists have not hesitated to inflict upon us. Canada is in sore need of a Lloyd George to-day. Let him show himself, let him declare himself, and the people of Canada will back him to the hilt. Enough of politicians! Give us a statesman!

Criminal Negligence.

NATIONAL Service means nothing more nor less than national team-work, the orderly marshalling of our resources in men towards the fulfillment of those duties that are essential and the elimination of those occupations that are non-essential.

If an able-bodied man spends his time dispensing ice-cream at a soda fountain when he might better be busy

helping to gather in the harvest, Canada is just so much the poorer because of her refusal to take unto herself the power to control him. Or, viewing it from another standpoint, if a mechanic who is engaged in the highly necessary work of producing munitions, drops his tools and goes on a journey of 2,000 miles to assist in the harvest field, when someone nearer at hand might have been found to do the latter work, and when perhaps an inexperienced laborer has to be broken in to take his place at the bench or at the forge, he unnecessarily disturbs his country's machinery for production and subjects her to an economic loss,—things which might easily have been obviated had he been placed under intelligent control.

Not long since, the newspapers of Eastern Canada were flooded with display advertisements, announcing the fact that 40,000 laborers were needed to harvest the grain crop in the Canadian North-West. Low fares were offered by the railways as an inducement for men to volunteer for the service. Just how many men were persuaded by these announcements to go West we do not know, but we do know that they went in sufficient numbers from plants engaged in the manufacture of munitions to retard very seriously the delivery of shells that were badly needed at the Front.

It is a splendid thing for Canada that the farmers of the North-West were able to grow a crop requiring so large an army to harvest it, but it is an unfortunate thing for Canada that her Government, who had plenty of warning what to expect, took so little pains to meet the situation. It is true that they arranged for soldiers in training camps to be given leave of absence for harvesting purposes, and for this they are to be commended. But they are more to be censured for the things which they have left undone than they are to be commended for the things which they have done. Without entering into any argument whatever as to the relative importance of grain crops and munitions, the fact remains that there are ample men in Canada, if properly directed and controlled, to enable both forms of production to be carried on successfully side by side. As it is, both farmers and munition manufacturers are short of help; grain is spoiling that might be saved, and guns are silent that might be hastening the day of victory; the farmer is trying to entice men to leave the factory and the manufacturer is trying to entice men to leave the farm; all the while that large numbers of strong, healthy young men, capable of handling a pitchfork or of operating a lathe, are selling neck-ties, mixing soft drinks, or doing something else equally superfluous for a nation that is at war.

The gravity of the situation can perhaps be more readily grasped by citing the experience of one manufacturer operating a number of industries, whose products are all bespoken for war purposes, and for which there is a most urgent need. In his various plants on the 1st of August, he was short fully 1,500 men. The Munitions Board and the French Government were pressing him for speedier deliveries. He was doing everything that a man could do to overtake the shortage of labor, but despite his best endeavors he was finding it impossible to increase his staff. On August 12th, in answer to the lure of the Harvesters' Excursion, nearly 500 of his men boarded the train for Winnipeg. As a consequence, the Munitions Board and the French Government had to be notified that instead of quicker they must expect slower deliveries.

The net result in the war zone will have to be left to the imagination. As to the harvest field, our correspondent thinks it safe to conjecture that twenty-five per cent. of the men who left him will never see it at all; for practically all of them, the excursion meant no more than a cheap holiday and an opportunity to see the country.

Could anything more clearly illustrate the need for organization, for national team-play? Could anything more emphatically condemn the inactivity of the Government and its refusal to give us National Service? Will the harvest of 1917 be left to the mercy of casual volunteers and will the remnants of our Canadian Expeditionary Force, who are still in the trenches next summer, be exposed to the consequences of such criminal negligence? The Government sadly misjudge the temper of the Canadian people if they imagine that Party allegiance will survive the strain of such shortcomings.

Potency of Organization.

THE fatal effect of trust control is well shown in the twine situation in the United States just now. The Sisal Fibre Trust of Mexico, securing control of practically all the fibre last fall, refused to sell until March 1st, thereby keeping large twine factories idle for months. It then advanced in price, and when plenty of fibre was arriving in May the workers tied up most of the plants from two to six weeks by a demand for higher wages. When this was settled, the most excessive heat for 20 years rendered some factory work impossible, and at the same time ripened the crop away ahead of time. Thousands of farmers meantime suffer for want of twine, but being largely unorganized, their voice does not carry far.

Through organization alone Canadian manufacturers are enabled to preserve their common rights, to advance their interests, and to build up the industries of the Dominion.

Patriotism and Business.

IN these days of indecision and divided councils, one note rings out clear and strong. It is a call for a closer co-operation, not only in Empire affairs, but in our Canadian industries and business concerns. It was this loyal sentiment in Canada that prompted the Canadians to give preference to the goods of the Mother Country, and to develop their railway system east and west instead of north and south, as a precaution against their trade being drawn towards the United States. Is the Canadian

manufacturer and producer of to-day less loyal to national ideals when every efficient quality of fidelity and patriotism is appealed to? Then why are the claims of Canadian designers and builders so frequently postponed to those of the Americans? Is it that the latter are more efficient? Such a conventional idea is a delusion. Prior to the war, Toronto manufacturers were regularly using various German products in the innocent belief that they were of higher quality. They have since found by experience that the British product is incomparably superior, both in quality and finish.

The awarding of the contract for the new Arsenal in Lindsay is a glaring case of such discrimination against Canada. Our Empire to-day is pre-eminent in its naval and military equipment, yet we go across the line to a people who make no such pretention, in order to obtain "improvements, devices and inventions." The absurdity of this situation is too obvious, but the worst of it is that these patriotic shortcomings unfortunately militate very seriously against Canadian development. During the year 1915, plans and specifications for structures in Canada were prepared by American architects amounting to $2,769,999.00, and of this $1,129,000.00 was awarded directly to American contractors, and $90,000.00 to Canadian contractors, the balance being in mose cases let to American contractors with Canadian specified as to certain work. During the same period American architects prepared for Canadians plans and specifications totalling $4,545,000.00, a considerable part of which is under way during the present year.

It were wished that, by this time, the phrase "Made-in-Canada" had become a moral dynamic. Instead, there does not seem to be sufficient patriotism on the part of concerns in Canada, who are erecting large buildings to induce their giving a chance to their own countrymen, particularly at the present time when practically every man is bearing some share of the added burden on account of the war. Canadian architects are not permitted to undertake work in most of the states of the United States, while many of them, both from a theoretical and practical standpoint, possess the highest professional qualifications. As a class, our own contractors are as competent as their neighbors across the line. They have the training and experience necessary to enable them to undertake the erection of any building or engineering work that Canada requires.

Some effective remedy is called for, with a view to overcoming the present undesirable situation in the interests alike of business and patriotism. It affects adversely the Canadian manufacturer and merchant, as well as the builder and mechanic.

Stopping Forest Fires.

IT is a good thing that we have a Forestry Association in Canada to keep alive the agitation for better forest protection. Already the alarm and indignation aroused by last summer's holocaust in Northern Ontario are dying down. The event has become historical; it has passed from the immediately impressive into the remotely observable. Unless the effect of the tragedy can be made to live on in men's minds until the Legislature is compelled by the strength of public opinion to do something drastic to prevent a recurrence of the catastrophe, it will be a national misfortune. The Forestry Association is valiantly doing its part to preserve the impression made immediately after news of the fire was flashed across the country.

The latest reminder from the Association takes the form of an expression of opinion by various experts on the value of the permit plan of controlling settlers' fires. The conclusions arrived at are impressive and are well worth emphasizing in these columns.

"After a careful study of the question," writes Hon. Jules Allard, Minister of Lands and Forests for Quebec, "we came to the conclusion that the most efficient means of protecting the forests from damage caused by settlers' fires, at the same time fostering the agricultural development of the Province, was the Permit System.

"This year, there must have been over 2,500 permits granted. There has been no damage caused by fire for clearing purposes made in virtue of these permits."

The President of the St. Maurice Forest Protective Association of Quebec, patrolling 12,000 square miles of forested and partly settled country states under date Aug. 31, 1916:

"We have been so successful under the Permit System that we would under no circumstances go back to the old way of handling fires. The settlers have co-operated with us in every way and their satisfaction is universal. So far we have had not a single fire caused by a settler, a most unusual and satisfactory record."

What says the Chief Forester of the highly organized Western Forestry and Conservation Association, Portland, Ore: "In our Pacific Northwestern States, the burning permit is as accepted a part of fire prevention as patrol or fire fighting. None considers abandoning it. Last year in the State of Washington alone, nearly 13,000 burning permits were issued, and under them 118,000 acres were burned over. The Permit is an absolute essential of any serious attempt to reduce fire in a developing forest region."

And this is British Columbia's testimony: "From experience gained in British Columbia, the unqualified statement is made that unless brush burning is controlled by means of permits, no real fire protection is possible in a timbered country."

Surely these statements are practical enough and sane enough to make it evident that Ontario must take similar action, if she is to preserve her forests from further wasteful destruction and the lives of her northern settlers from danger.

Farm Colonies or New Industries?

IN the June issue of *Conservation of Life,* a quarterly bulletin issued under the direction of the Commission of Conservation, Dr. Peter H. Bryce suggested an interesting solution of the problem, what is Canada going to do with her returned soldiers after the war? Dr. Bryce's conclusion was that the best plan which could be devised would be to establish farm colonies, with here and there soldiers' homes as centres. These colonies would be financed by means of government loans, and would be conducted as co-operative undertakings.

The picture presented by Dr. Bryce of the happy and prosperous way in which the returned soldiers would live in the farm colonies; the physical, mental and moral benefits they would derive from the open-air life; and the advantages that the community would derive from the increased output of agricultural products, added strikingly to his argument in favor of this form of assistance.

Dr. Bryce held that employment in industry would not present anything like the same possibilities for the returned soldier as employment in agriculture. For one thing, he showed that by far the larger proportion of the men enlisted in the Canadian army were drafted from the ranks of unskilled labor. For another, he held that there would not be industrial opportunities after the war. "The creation of new industries," he contended, "must depend upon a demand for new products and the obtaining of necessary capital. The first is not probable, while as regards the latter we know very well that the enormous amounts of capital available in Britain before the war for foreign investment have already been largely absorbed in war loans. So we must assume that the development of new industries in Canada will for a time prove slow."

With the claims of Agriculture thus emphasized, Industry needed a champion and she has found one in Mr. Louis Simpson of Ottawa. Mr. Simpson has undertaken to reply to Dr. Bryce on behalf of the industrial interests of the country. Here are some of the doughty blows he strikes on their behalf:—

Will the encouragement of agriculture, as recommended by Dr. Bryce, secure the end desired, at the lowest cost to Canada?

Dr. Bryce would appear to be amongst those who have the idea that the business of farming can be carried on without the assistance of considerable capital or credit.

The money or credit required by a man desiring to farm a quarter section in the Great West of Canada largely exceeds the following estimate:—

Land, one quarter section, viz., 160 acres, at $1 (very low price	$ 160
House, stable, sheds	500
2 horses, harness, wagon, sleigh, buggy and a minimum of implements and of furniture, exceeding $2,000, but, to be conservative, say	1,000
Seed .....from $450 to	300
Living for one year whilst crops are sown and marketed	175
	$2,135

Therefore it requires over $2,000, cash or credit, to finance a man upon a quarter section of land in the west, even when land can be secured at the lowest cost.

But every unskilled laborer will not succeed as a farmer. A very large percentage will make a failure, through faults inherent to the men when placed in environments uncongenial to their make-up and antecedents. These failures occur apart from the failures which also must occur and which are resultant from what is known as "Acts of God," viz., through the occurrence of hail storms, wind storms, fire, drought and floods. Nor must the risk be run of selecting a quarter section which may contain an unusual proportion of barren, or at any rate, inferior soil, be overlooked.

All these failures have to be allowed for in any scheme financed by the Government. It may be that the $2,000 per head may have to be calculated as $3,000 per head when the money lost through these failures is accounted for.

Cannot the aid desired to be given to unskilled labor be given at the cost of less expenditure of money?

Dr. Bryce states that "the creation of new industries must depend upon a demand for new products." Such a statement might be, and probably is correct, when applied to an old country where the natural resources have for years been fully developed, but such a statement is absolutely incorrect when applied to a new country, the natural resources of which are very little developed, owing to the lack of the capital necessary to secure such development. It is evident that Dr. Bryce has not made a study of, and is not well acquainted with Canada's immense undeveloped natural resources. In this Dr. Bryce has a plenty of distinguished company. I know of three industries, *and certainly there are others,* none of which depend "upon a demand for new products," all of which could and would employ large numbers of skilled labor, were capital only available, and where the capital required is at a rate, per head of those employed, lower than the lowest required where those helped are employed in agriculture.

These industries are:

First.—The retorting of oil-bearing shales and the manufacture therefrom of sulphate of ammonia and crude oil, with the subsequent manufacture, by fractionation and refining, of gasoline—burning fuel, gas and lubricating oils.

Second.—The reduction and refining of Canadian iron, copper and nickel ores.

Third.—The mining of iron pyrites and the use of the sulphur contents in place of imported sulphur.

Of these, I am best acquainted with the first, and because I believe in discussing "that which I know," I will confine my further remarks to this possible industry. The oil shale industry has been in successful operation in Scotland for over 60 years. The known deposits in Canada of oil-bearing shale are richer than those being worked in Scotland.

Before the war, Canada imported over $12,000,000 worth of oils and gasoline, all of which could have been obtained by the retorting of the oil-bearing shales found in Canada.

Were those shales worked, and were Canada's requirements of gasoline and oil so obtained, the industry would employ directly and indirectly from 7,000 to 10,000 men, chiefly unskilled labor.

The capital, per head of those employed, required for the erection of the necessary works, instead of being over $2,000, with a chance of being over $3,000, as required in agriculture, is less than $2,000.

If backed by a government guarantee, such capital could be raised in the States, and with reasonable care not one dollar of the money, so obtained, would be endangered or lost.

Within twelve months of the termination of the present war, the importations of gasoline and of oil, unless something is done to secure supplies from the oil-bearing deposits of shale in Canada, will approach $20,000,000 per year. Certainly Dr. Bryce's contention that "the creation of new industries must depend upon a demand for new products" was not well taken. Canada has, in the past, suffered from the impossibility of securing the use of capital to develop its natural resources. Syndicates and rings in Europe and in the States, who control in their respective countries the large accumulations of capital, see to it that capital is only allowed to flow to help such enterprises as they themselves control, or which they can acquire upon their own terms. There would, however, seem to be no reason why the government should not, in such cases, ensure the development of such resources as are of national interest, by the granting of the necessary financial assistance.

ELIMINATING FATIGUE IN FACTORIES

How the Problem Should Be Studied, with Hints as to Ways of Reducing Loss by Fatigue

By FRANK B. GILBRETH

(Reproduced from Manufacturers' News.)

WORKING without fatigue—accomplishing the most efficient results in factory production with as little exertion as possible—this is what Frank B. Gilbreth describes in his book, "Fatigue Study; the Elimination of Humanity's Greatest Waste."

It is particularly timely in view of the discussions that have been raised in the United States by the attempt on the part of certain labor leaders to abolish, by national legislation, time and motion studies in Government plants. Manufacturers apprehend that this attack on efficiency and the stop-watch will be extended some day to private plants and are strenuously protesting against such "monkey-wrench legislation."

An idea of what Mr. Gilbreth's book teaches may be gathered from his opening paragraph:

Heedless, Ill-Directed Motions

"In 'Motion Study' we stated: 'There is no waste in the world that equals the waste from heedless, ill-directed and inefficient motions.' It is an aspect of wasted motions that we are studying here. Wasted motions mean wasted time and effort."

Every worker at the end of his day's work in the factory, if he followed the principles laid down in Mr. Gilbreth's book, ought to leave cheerfully and briskly, with his head up and a satisfied expression on his face. If he walks slowly and with effort and looks as though life were not worth while, it is a matter of fatigue.

How would a factory superintendent remove this poison of fatigue and make workers happier, more efficient? It is largely a matter of resting at intervals, one gathers, and in improving work methods. Motion studies and fatigue studies are closely related.

Fatigue is divided into two classes:

1. Unnecessary fatigue, which results from unnecessary effort, or work which does not need to be done at all. A typical example of such work is that of the bricklayer, who furnished one of the first subjects for motion study. Anyone who has watched a bricklayer lift all of his body above the waist, together with the bricks and mortar from the level of his feet to the top of a wall cannot fail to realize that bricklaying requires a great amount of energy as well as skill. Yet by far the most of the energy expended in the method of laying bricks, that had existed for centuries, was entirely unnecessary.

2. Necessary fatigue, which results from work that must be done. The new method, which enabled this same bricklayer to lay three hundred and fifty bricks, where he had laid 120 bricks per hour before, did not eliminate, and did not expect to eliminate all of the fatigue accumulated in the working day. The bricklayer at the end of the day, by reason of motion study devices, laid more brick, but was nevertheless much less tired.

Problems to Study

The problems of fatigue study are stated as follows:

1. To determine what fatigue is unnecessary.
2. To determine what fatigue is necessary.
3. To eliminate all unnecessary fatigue possible.
4. To distribute the necessary fatigue properly and to provide the best possible means for a speedy and complete recovery.

Mr. Gilbreth recommends that any organization which is thinking of introducing scientific management make a survey of the entire plant and start where there is the most fatigue. It is there that the greatest good can be accomplished and the co-operation of the workers will be most quickly gained. The survey maker, especially if he be an amateur, will become encouraged as he sees his data successfully used. The procedure used may be as follows:

1. Record the man's age, birthplace, preparation, experience and fitness. These will help in determining the percentage of fatigue.

2. Record the man's physical characteristics, as far as can be observed, such as size, strength, skill, strong points and weak points.

3. Record, as closely as possible, the man's behavior, as indicating his mental condition. To be specific, note whether he seems interested in the work. Note his habits of doing the work—whether he does the work the same way every time, or whether he varies in his methods. Note his degree of ability to learn quickly. Note his power of concentrating attention. Note his degree of contentment with his work. In recording working conditions, these things are included:

Length of the working day.

Condition of lighting, heating, cooling and ventilation.

Fire protection and safety protection as it includes all—this to include protection from dust, lint, or any substance which might affect health.

Conditions that affect the individual worker—places of the work, the work bench or table or other device for holding the work; the chair, foot rails or rests, or other devices for affording rest to the body or some part of the body; the material worked on and its placing; the tools or other devices by which the work is done; the clothing of the worker.

Record the results of the work—the average amount of output; the hours of the working day when fatigue seems to exist. If a general appearance of fatigue seems to occur at any time, make especial notes of all attending conditions of every kind.

SOME OF THE MEANS BY WHICH FATIGUE MAY BE REDUCED

Shorter working hours.
Rest periods during the working day.
Eliminating needless motions.
Showing the relation between fatigue and activity.
Interest the employee in his work.
Time and motion studies.
Arm chairs and chairs with real arms especially fitted to the individual worker. These will be more efficient if provided with footrests.
Let the worker sit down whenever possible.
Welfare or betterment work.
See that there is enough light for the worker and that it is properly distributed.
Plenty of ventilation is essential.
Crowded working conditions make for fatigue, avoid clutter, which causes confusion, useless motions and wastes mental energy.
See that the work bench and chairs are at the proper height. In Mr. Gilbreth's laboratory working girls are measured for their chairs, which are particularly adapted for them and their work.
Use gravity and mechanical means wherever possible in the placing of materials and working equipment.
Suitable clothing is important.

WOMEN IN THE MUNITIONS INDUSTRY

Observations on the Employment of Women in Munition Factories in France

WOMEN are already being employed in Canadian munition factories to a certain extent, as the illustrations accompanying this article indicate, but as yet their utilization has not reached the point where it could be said that their labor has become an important factor in production. With the increasing pressure on the manufacturers, due to the shortage of male help, a larger and larger number of women workers will have to be employed if the output is to be maintained. This makes the problem of the employment of women workers in munition factories one of great interest at the present moment.

A gentleman, who is thoroughly conversant with conditions in France, has contributed a few valuable observations on the way in which female labor has shouldered the munition-making burden in that country. In view of what may develop in Canada in the near future, his remarks will be read with interest by munition manufacturers in the Dominion.

In France he states the men have welcomed the introduction of women into the factories, and are doing everything they can to instruct and co-operate with them in increasing the output of munitions. This feature is important, as the introduction of the women has not only meant an increase in the output of munitions by increasing the supply of labor, but has also assisted in freeing men for service in the army.

Much good work has been done in France in very small factories, which work, as a rule, is on sub-contracts obtained from the larger firms. Many of these small shops are manned by members of a family and their immediate friends, male and female, and they work day and night shifts. In one small factory, which is typical, the day shift is superintended by the father and daughter, and the night shift by the eldest son and the mother.



Operating milling machines, sometimes called band-milling, in a Canadian munition factory



Women inspecting the various parts of the time fuse and shell in a Canadian munition factory

Day and Night Work

Practically all factories work day and night, sometimes two and sometimes three shifts per day. When only two shifts per day are worked there is generally a large break, one-and-a-half to two hours, in the middle of the day, which enables the married women workers to look after meals in the home and to the comfort of the children. On night shifts, usually of ten hours, this long break is not often given. One hour is generally allowed for the meal, though only half-an-hour is taken, and only in a few cases is the machinery stopped.

In most cases shifts are changed once a fortnight, and at the change it is found advantageous to give the work people a continuous rest of twenty-four hours. Saturdays are worked the same as other week days, but in many shops no work is done after noon on Sundays, thus giving time for overhauling and repair of machines, etc.

In practically all cases the women have been introduced since the commencement of the war, and they have been drawn from all kinds of occupations. In most cases the women work the same hours as

men, though it has been frequently found advisable for the women to start a quarter of an hour after the men, and to leave a quarter of an hour earlier. This avoids congestion at work gates and on trams, etc.

Night-shift output generally is quite equal to that of the day shift, and generally there appears to be less interruption to work at night.

Women Work by Day

The general tendency in France was to work women as much as possible by day, and such men as are employed as much as possible by night. This, however, has been modified as the experience with women labor has been eminently satisfactory, and women work night shift.

There is no restriction to the class of work that women do. The only processes confined to men are tool setting and tool making, though, with regard to these classes of work, numbers of women are showing that they can do it satisfactorily, and some women are now grinding cutting edges of the tools for the machines. The following work is generally done by women in French factories:

Hand Work.—Assembling; brazing; charging gaines, checking; compressing powder in rings on time fuses; core making; filling shrapnel with bullets and resin; gauging; loading rifle cartridges; moulding (sand); oxy-acet-welding; screwing in shrapnel caps; soldering, etc.

Machine Work.—Boring, including finish boring; centreing; chamfering; working Cleveland machines—4 bars—one woman to two machines; drilling, grinding general turning tools (jigs supplied.)

Lathe Work.—Centre, power and hand. *Shell*—4 tools on one rest, base faced by tool on hack rest in one operation. *Shell*—Two tools on one rest, turning copper bands. *Finishing shell*—Hand filing for finishing to gauge; combination boring.

Machines.—Two and three worked by a woman, according to operation.

Milling and thread milling.



Operating a drill in connection with the making of time fuses



Inspecting the "body" of the time fuse, or "guaging the body," as it is described in England

Narling recess for copper bands.

Painting shells.

Women do practically all the work on 75 M/M shell complete; 120 M/M shell complete; fuses complete; rifle cartridges, including loading, but not loading of caps.

One consideration that has made the employment of unskilled men and women so satisfactory is the specialization of each factory on a single product as far as possible.

Output is Equal

The output of factories in France, working female labor, equals that of those working male labor. Physical considerations, of course, limit the range of work that can be done by women, but apparently there is no other limiting cause. It is essential that good locker, washing, sanitary accommodation and rest room, with proper female attendance, be provided for women workers. It has been found advantageous for employers to provide caps and overalls, and to arrange for the washing of same, for women workers, though this practice is not universal.

Nearly all women's work is piece work, premium bonus systems not being liked. Women get the same piece-work rates as do men. During the period of training women are given a day rate, and after they are trained this rate appears to be maintained as the minimum guaranteed rate. The period required for training women for simple machine operations averages about one week. Sometimes it extends to two weeks, but some women have shown proficiency after one day's training. The instruction of women is done in each factory. the Government have not set up training schools. In some cases a man will teach a woman, who will then take his place and train another woman, and so on, each woman as she becomes proficient becoming a teacher for an unskilled woman. At first some workmen objected to this system, but this has long since disappeared, and no difficulty is now placed

in the way of unskilled male and female labor being enabled to acquire all the skill necessary for the work.

In France, trade union rules, as regards wages and labor conditions, have been entirely suspended. In French factories there is an almost entire absence of lost time. A large proportion of male labor employed in factories in France is military, many of the men are those rejected as unfit for active military service, but are still mobilized. No strike of work people has taken place in France since the commencement of the war. No application for general advances in wages have been made since the commencement of the war.

Opinion is divided as to the desirability of having women superintendents of discipline as distinguished from superintendents of manufacturing operations. There is little or no evidence of fatigue due to the work performed by women, and it is thought that the long rest in the middle of the day, and the absence of overtime beyond the usual working hours, have an important bearing on this question. Work people in France have raised no question as to limitation of profits.

IMPORTANT INDUSTRIAL TRANSFER

Negotiations for the purchase of the Standard Ideal Company at Port Hope, in the early development of which Sir Max Aiken was a prominent figure, were completed last month, and the plant and assets have passed into the hands of a new company to be known as the Port Hope Sanitary Manufacturing Company. The vendor was the Montreal Trust Company, and the price paid for the company's assets is said to be slightly in excess of a million dollars. The new company is capitalized at $1,250,000, and its directors include L. M. Wood, of J. & L. M. Wood, President; R. J. Cluff, President of the Cluff Manufacturing Company, Vice-President; W. D. Ross, Vice-President of the Nova Scotia Steel Company; W. J. Cluff, President of the Canada Pipe & Steel Company, and M. L. Davies, Vice-President of the Standard Chemical Company, directors. The management of the business will be in the hands of Messrs. R. J. Cluff and W. J. Cluff, the controlling interests in the Cluff Manufacturing Company, which has been for a number of years engaged in the manufacture on a large scale of plumbing supplies. The Standard Ideal Company, which has just changed hands, has been manufacturing bath tubs and porcelain goods.

PAINT THEM RED

C. W. Woodman, State Labor Commissioner of Texas, believes that all employers are anxious to reduce the chances for accidents to the minimum, and at the same time to safeguard their machinery. The Commissioner has issued suggestions and recommendations to employers which, if adopted, will aid materially in preventing accidents. The recommendations: "That all safety appliances be painted red, and that all receptacles for gasoline be painted the same color. In our inspections we frequently find a safety device lying on the floor; taken off usually to make repairs, and left off through carelessness. Painted red, it will be readily seen and will be a constant warning. Besides, painted red, while in use it will be a constant warning to the user of the machine that care should be taken. The importance of having gasoline receptacles painted red is impressed upon the Labor Department by the numerous accidents occurring through mistaking a can containing gasoline for something else. The cost attached to carrying out these recommendations of the State Labor Department will be small. Carried out, many lives and limbs will be saved."—*Safety Engineering.*

GROWTH OF CARBIDE INDUSTRY

Recent demand for new materials other than those Canada has been accustomed to produce in the past has awakened the latent energies of our foremost captains of industry, and as a result Canadians have surprised themselves as much as they have surprised the outside world by coming to the front and producing articles, such as munitions, which up to two years ago they had never dreamed of manufacturing.

The adjustment of commerce amongst the Allies has drawn heavily on other manufacturing industries and possibilities never before dreamed of are now being realized. Among such industries might be mentioned the Canada Carbide Company, Limited, with works located at Merritton, Ont., and Shawenegan Falls, Que. This company first doubled their capacity, then trebled it, and recently have quadrupled their capacity of three years ago, so that they now have the largest carbide works in the British Empire.

The demand is increasing so fast that another enlargement is contemplated. This means a great increase in the demand for Canadian raw material. It means increased demand for Canadian labor and capital. It is also an advertising medium, as every package shipped is plainly branded "Canadian Carbide," and the quality of the carbide being the very best, has enabled the company to hold old customers and win new ones.

Canadian carbide is used in all parts of the world—China, India and the islands of the seas, in addition to the British Colonies and the United Kingdom.

The Canada Carbide Company, Limited, is also branching out by making other metallurgical products, of which we are promised a brief account at some future date. This has been brought about by having a large quantity of cheap electrical power. The Canada Carbide Company, Limited, is closely allied with the Shawenegan Water & Power Company, from whom they purchase electrical power.

NEW TRADE-MARK AND PATENT LAW IN SOUTH AFRICA

By an Act of the Parliament of the Union of South Africa, which received the assent of the Governor-General on April 15th, 1916, the laws of the various Provinces of the Union relating to the protection of patents, designs, trade-marks and copyrights are repealed and replaced by a uniform law for the whole Union. Provision is made for continuing the validity of registrations effected under the old provincial acts. Within one year after the commencement of this Act patentees may apply for patents under the Union Act without affecting rights previously acquired.

In the case of trade-marks, registration secured under one of the provincial acts will be regarded as valid also under the new law, and a second registration will not be required in order to receive full protection under the new law. Similarly copyrights will continue to be valid throughout the Union. With certain slight modifications the British Copyright Act is adopted in its entirety as the law of the Union of South Africa.

Fees are prescribed for patent applications, and the Governor-General is authorized to prepare a schedule of fees for other purposes and to make the necessary regulations for carrying into effect of the Act. The different sections of the Act relating to patents, designs, trade-marks and copyrights are regarded as independent, and the Governor-General is authorized to fix by proclamation the date upon which each is to come into effect.

The privileges of protection for patents and designs are not to be extended to the citizens of countries outside of the Union until it has been determined that such countries grant similar privileges to the citizens of the Union of South Africa, and a proclamation to that effect has been issued.

GOVERNMENT OWNERSHIP OF RAILWAYS IN CANADA*

By SAMUEL O. DUNN

(Continued from the August Issue)

THE conclusion that at least two-thirds of the losses incurred by the Intercolonial are not due to its rates suggests that they must be due to uneconomical management. In this connection stress must be laid on the fact that the cost of providing railway service necessarily includes capital expenses, as well as operating expenses. A further fact which often is overlooked is that there is a very close relationship between capital expenses and operating expenses. Under either private or public ownership the public must ultimately pay all of both of these classes of expenses; and the amount of operating expenses will under either policy depend largely on the amount of the capital expenses efficiently incurred. To reduce the grades of a railway involves an increase of investment and fixed charges—in other words, of capital expenses; but if the investment is wisely and efficiently made, it will cause a still greater diminution of operating expenses. The total expenses will thereby be diminished. Likewise, if needed capital expenditures are not made, there will be needless increases of operating expenses; if capital expenditures are unwisely or inefficiently made, there will be needless increases of fixed charges; and in either case the total expenses will become needlessly large. This close relation between capital expenses and operating expenses illustrates the folly so strikingly exemplified in Canada, of the common practice of keeping the accounts of government railways so as not to show the exact amount of interest paid on the investment, and of calling all their net earnings "profits." It would be equally rational to ignore the operating expenses also, and to call the total earnings "profits."

Bearing in mind these facts and principles, let us investigate the total expenses of the Intercolonial. Its cost to the public to June 30, 1914, including its losses, was $219,000 per mile. Interest on this at 4 per cent. is $8,760 per annum, which, added to its operating expenses, $8,718 per mile, makes a total expense to the Canadian public for the service of the road of $17,478 per mile of line, without allowing anything for the taxes lost to the public because it is not privately owned.

Rates Would Have to be Doubled

To pay this total from its earnings the Intercolonial's rates would have to be raised 102 per cent. The Canadian Pacific on its eastern lines charges rates slightly higher than those of the Intercolonial; it handled in 1914 a traffic slightly smaller; it collected only $10,045 per mile of line in rates from the public; and yet it paid taxes, interest on its bonds, and 10 per cent. dividends on its stock, 7 per cent. of these being from earnings; and it had a surplus averaging $256 for each mile of line.

It may be contended by some that the inclusion of all the losses the Intercolonial has sustained in getting a basis for ascertaining its actual present expenses is not fair. The writer believes that this is the only method which discloses the amount which government ownership and management have cost and are costing the people of Canada. But, to avoid this objection, let us disregard the losses sustained prior to 1914. In 1914, the cost of construction of the Intercolonial was officially reported as $70,815 a mile. Interest on this at 4 per cent. is $2,833. Added to operating expenses, $8,718, this makes a total expense per mile, as already indicated, of $11,541. Taxes on the same basis as those the Canadian Pacific paid would increase this to $11,671. The Canadian Pacific eastern lines, for each mile of line operated, collected

TABLE III.

COMPARATIVE STATISTICS OF THE INTERCOLONIAL AND CANADIAN PACIFIC EASTERN LINES FOR THE YEARS 1914 AND 1915.

	Year ended June 30, 1914.		Year ended June 30, 1915.	
	Intercolonial.	Canadian Pacific Eastern Lines	Intercolonial.	Canadian Pacific Eastern Lines.
Mileage	1,457	4,596.2	1,459	4,786.9
Average cost (or capitalization) per mile	$70,815	$51,021†	$75,066	$47,863†
Passengers carried one mile per mile of road	137,390	172,790	115,105	126,208
Passenger-train miles per mile of road	2,096	2,499.5	1,939	2,170.1
Average passengers per train	51	69	46	58
Average rate per passenger per mile, cents	1.67	1.808	1.81	1.894
Average total earnings per passenger-train mile	$0.978	$1.599	$0.966	$1.409
Total passenger-train earnings per mile of line	$2,839.90	$3,895.94	$2,705.80	$3,057.07
Ton miles per mile of road	923,541	823,064	793,315	695,000
Revenue freight-train miles per mile of road	3,466.13	2,655.2	3,101.64	1,999.4
Average tons per train	264.74	309.98	260.54	347.56
Average rate per ton per mile, cents	0.60	0.716	0.52	0.719
Average earnings per revenue freight-train mile	$1.61	$2.219	$1.58	$2.50
Total freight revenue per mile of line	$5,568.54	$5,891.69	$4,887.64	$4,998.51
Operating revenue per mile of road	$8,625.13	$10,044.86	$7,745.15	$8,314.54
Total train miles per mile of road	5,562.25	4,987.4	5,033.9	3,987.1
Operating revenue per train mile	$1.55	$2.01	$1.54	$2.09
Operating expenses per mile of road	$8,717.87	$8,341.34	$7,775.89	$6,199.94
Operating expenses per train mile	$1.57	$1.67	$1.545	$1.56
Net earnings per mile of road	—$92.74	$1,703.52	—$30.74	$2,114.60
Taxes per mile of road	None	$130.30†	None	$123.90†
Operating income per mile of road	....	$1,573.22	....	$1,990.70

*Reproduction of an article appearing in the July issue of the *Journal of Political Economy*. The first portion of the article will be found on page 511, August issue of INDUSTRIAL CANADA.

†Average for entire system. All computations furnished from official sources.

15 per cent. less than this from the public, while handling only 6.5 per cent. less traffic per mile; they paid taxes, and they earned $1,573 net operating income per mile; and the Canadian Pacific system, as already indicated, not only paid interest and dividends, but had a surplus. To have paid 4 per cent. interest, and paid taxes and put aside surplus in the same proportion, the Intercolonial would have had to collect from the public $11,900 for each mile of its line, or 18 per cent. more per mile than the Canadian Pacific eastern lines did. The data on which these comparisons are based are given in Table III.

It is clear that the service of the Canadian Pacific, while profitable to its owners, costs the public much less in proportion than that rendered by the Intercolonial. And the expense of it is more equitably distributed. It is all paid by those who receive the service, while only from one-half to three-fourths of the total expenses incurred by the Intercolonial are borne by those who receive its service. The rest is borne by the taxpayers.

The question naturally arises why the total expenses of the Intercolonial are so great. Its "cost of construction"—the investment in it—as officially reported, amounting in 1914 to $70,815 a mile, is excessive according to the standards of Canada and the United States. The average capitalization of the railways of the United States in 1914 was only $66,661; and an average mile of their line was a much better piece of property and handled substantially more traffic than the average mile of the Intercolonial. The average capitalization of the private railways of Canada, excluding duplications, was $53,619.[1] The average capitalization of the Canadian Pacific system was $51,021. Most of the privately owned railways of Canada, and conspicuously the Canadian Pacific, have received subsidies from the government. The receipts of the Canadian Pacific from its land grants amount to about $6,000 for each mile of its line. But the government aid it has received is far from adequate to account for the difference of over $17,000 a mile between its average capitalization and the Intercolonial's "cost of construction." The explanation of the Intercolonial's large cost of construction must be that expenditures on it have been made wastefully, or that its accounts have not always distinguished accurately between expenditures for construction and expenditures for operation.

Waste in Construction

That there long was scandalous waste in the construction of the Intercolonial is beyond question. Many years ago Sir Alexander Galt moved in Parliament that "the present system under which the road is being built as a public work of the Dominion is expensive and unsatisfactory; . . . and that in the opinion of this house the construction and future operation of the line should be committed to private hands." Walter Shanly, the most eminent Canadian engineer of his day, who built the Hoosac tunnel, alleged that the Intercolonial "had already involved a vast waste of money and done much to contaminate public life." Sir John MacDonald, when prime minister, said that he was "tired of the disclosures about frauds and shortages, bankrupt contractors, and contractors who had made a fortune with suspicious ease, and was disposed after construction was completed to turn over the operation of the line to the Grand Trunk or some other company." Before the Civil Service Commission of 1892, Collingwood Schreiber, a distinguished engineer, then deputy minister of railways, and for some years general manager of the line, testified that he had taken some sand from a gravel-pit in the woods near Gloucester Junction for which he offered $5 as ample compensation. The owner, backed by local politicians, demanded $70,000, and in the end obtained $16,000. "The public's mind," said Mr. Schreiber, "is pervaded with the idea that one has a right to get all one can from the public treasury." The original estimate for an extension from Hadlow, near Quebec, to St. Charles Junction, fourteen miles long, was $600,000. Property owners whose land and buildings were condemned appealed with such success to local politicians for assistance, "and swore one for another as to values" so ably, that the line finally cost $2,200,000.[2] It seems to have been a common practice to let contracts for new construction and improvements to concerns and individuals because they were supporters of the party in power.

The only structures or facilities of the road whose character tends to explain its relatively high cost are certain of its passenger stations, which are very large and pretentious-looking for the towns in which they are situated. One is told in Canada that these are due to the influence of local members of Parliament. Appropriations for passenger stations on the Intercolonial sometimes are part of the "pork barrel" in Canada, as appropriations for postoffice buildings are in the United States.

Heavier Freight Traffic Than C.P.R.

Let us now turn from the road's capital expenses to its operating expenses. During most of the last ten years it has handled more traffic per mile, both freight and passenger, than the eastern lines of the Canadian Pacific. Within recent years the Canadian Pacific has had a heavier passenger business; but the Intercolonial still has a denser freight traffic. This was true in 1914; and in that year it ran 5,562 trains over each mile of line, as compared with 4,987 run by the Canadian Pacific eastern lines. Bearing these facts in mind, it is interesting to study the analysis of operating expenses given in Table IV.:

TABLE IV.

OPERATING EXPENSES, 1914.

	Intercolonial.		Canadian Pacific Railway Eastern Lines.	
	Total Operating Expenses per Mile.	Per Cent. of Total Operating Expenses.	Total Operating Expenses per Mile.	Per Cent. Total Operating Expenses.
Maintenance of way and structures	$1,454.00	16.66	$1,744.00	21.87
Maintenance of equipment	1,916.00	22.06	1,621.00	20.33
Conducting transportation.	4,936.00	56.56	4,247.00	53.27
Traffic Expenses	199.00	2.22	171.00	2.15
General expenses	245.00	2.55	188.00	2.37

A question arises: Why are the Intercolonial's expenditures for maintenance of way and structures smaller than those of the Canadian Pacific, when the amount of traffic it handles and the number of trains it runs are larger? It may be answered that it is because the Intercolonial is more economically operated. This explanation can hardly be accepted because, while its total traffic, passenger and freight, per mile is only about 6.5 per cent. heavier than that of the Canadian Pacific eastern lines, its cost of maintenance of equipment per mile is 11.5 per cent. greater, its cost of conducting transportation per mile 13.5 per cent. greater, its traffic expenses per mile 16.5 per cent. greater, and its general expenses per mile 30 per cent. greater. The advocates of government ownership claim that it would save money by doing away with the "princely" salaries paid to the higher officials of railways. The salaries of general officers are included in "general expenses." These, as just noted, are 30 per cent. higher per mile on the Intercolonial than on the Canadian Pacific eastern lines; and the expenses of the railway department of the government are not included in this calculation. The Inter-

[1] "Operating Results of Canadian Railways in 1914," by J. L. Payne, controller of statistics of Canadian railway department, in *Railway Age Gazette*, March 26, 1915.

[2] *Montreal Gazette*, October 21, 1915.

colonial's small expenditures for maintenance of way and structures are partly due to the fact that, on the whole, its roadway and track are not kept in as good condition as those of the Canadian Pacific. A further explanation may be that expenditures which really should be charged to maintenance of way are charged to construction. The line between maintenance of way, and additions and betterments, is hard to draw accurately; and where a management is confronted with chronic deficits, as on the Intercolonial, it is under a constant temptation to make as good a showing as possible regarding operating expenses, by charging everything it can to capital account.

Low Maintenance Charges

The small expenditures of the Intercolonial for maintenance of way are not new. In the five years ending with June 30, 1914, it spent on this account an average of only $1,317 per mile of line, while the Canadian Pacific system, handling a smaller traffic per mile, spent an average of $1,497. The fact that the capital—or "cost of construction"—account of the Intercolonial is rapidly growing larger without causing reductions, absolutely or relatively, in transportation expenses, supports the theory that its low figures for maintenance of way expenses are largely fictitious.

There is nothing fictitious, however, about its relatively large expenditures for other accounts. One of the surest indications of uneconomical and inefficient management is that a road is spending a relatively small part of its earnings for maintenance and a relatively large part for conducting transportation and for general and traffic purposes. What is spent for maintenance goes into the physical property and helps to keep up or improve the service, while what is spent for conducting transportation and for general and traffic purposes adds nothing to the physical property, but is gone forever. Relatively large expenditures for maintenance of way are more important than those for maintenance of equipment; for the latter may be due to a system of management which provides and uses an unnecessarily large amount of equipment. It is especially important to keep down the cost of conducting transportation, not only because the outlay made for it is gone forever, but because it is much the largest item of railway expenses.

The main reason for the Intercolonial's relatively high cost of conducting transportation is obvious. The most effective means for restricting this part of expenses is to handle traffic in the largest possible carloads and trainloads. Now, the Intercolonial has a long average haul per ton, 265 miles; it has a denser freight traffic than the Canadian Pacific eastern lines; and yet in 1914 it carried only 265 tons per train, as compared with 310 tons for the Canadian Pacific eastern lines. In consequence it ran 30 per cent. more freight trains over each mile of line to handle 12 per cent. more freight traffic. Similarly it ran 84 per cent. as many passenger trains over each mile of line to handle 74 per cent. as much passenger traffic. The comparatively small trainloads of the Intercolonial help to explain not only its high transportation expenses, but also its high maintenance of equipment expenses. The more trains run to handle a given business, the more equipment there must be provided and maintained and the larger, other things being equal, will be the expenditures for maintenance of equipment.

The road's relatively large expenditures for conducting transportation and maintenance of equipment are no more a new thing than its relatively low expenditures for maintenance of way. During the five years ending with 1914, while its maintenance of way expenses per mile were less than those of the Canadian Pacific system, its maintenance of equipment expenses averaged $1,746 per mile, or 33 per cent. more, and its conducting transportation expenses $4,075 per mile, or 19 per cent. more.

In the United States 20 per cent. of the operating expenses of the railways are incurred for maintenance of way, while on the Intercolonial less than 17 per cent. are incurred for that purpose. In this country maintenance of equipment expenses are 23.8 per cent. of total operating expenses, while on the Intercolonial they are 22 per cent. On the railways of the United States less than 51 per cent. of operating expenditures are made for conducting transportation; on the Intercolonial, almost 57 per cent. The Intercolonial makes 39 per cent. of its operating outlay for both classes of maintenance and 61 per cent. for other purposes. The railways of the United States make 44 per cent. of theirs for maintenance and only 56 per cent. for other purposes. The railways of the United States, with a capitalization smaller than the Intercolonial's cost of construction, handle 5 per cent. more passenger traffic and 27 per cent. more freight traffic per mile, with only 2.6 per cent. greater operating expenses. One need not be expert in the analysis of railway statistics to see that those of the Intercolonial indicate a management which is extremely uneconomical as compared with that of the average railway in Canada or the United States.

Gutelius is Energetic

Little of the blame for this poor showing can apparently be placed on the present minister of railways, Hon. Frank Cochrane, or the present general manager, F. P. Gutelius. When Mr. Cochrane came into office a few years ago he evidently realized that the road had long been wretchedly mismanaged; for he put Mr. Gutelius, an experienced and able railway man, a former officer of the Canadian Pacific, in charge, with large authority. Mr. Gutelius went energetically to work to increase earnings and reduce expenses. He received the loyal support of most of the officers; and he has continued, up to the present, his efforts to improve the results secured.

The general confusion and reduction of railway earnings caused by the war have made it difficult to measure the effects of his exertions. And unfortunately the Canadian public, especially that part living in the provinces in which the Intercolonial operates, and the representatives of this part in Parliament, have grown accustomed to having, and, indeed, insist upon having, the Intercolonial managed in ways which mainly account for its high expenses. Almost every increase of rates or reduction in expenses which the present management has attempted to make has encountered opposition which soon has been supplemented by or converted into political pressure. When it tried to reduce the excessive local freight and passenger service being given, the communities effected appealed to their deputies, and they to the minister of railways. When efforts had been made to dispense with needless employees, deputies have interposed in defense of their partisans. The fiscal year ending on June 30, 1915, was a period of acute business distress in Canada. There was a heavy decline in railway traffic. How much more freely and energetically the management of a private railway company can act in such an emergency than the management of a state railway subject to political pressure is indicated by the fact that while the Intercolonial suffered a loss of total earnings per mile of 12 per cent. and reduced its operating expenses 11 per cent., the Canadian Pacific eastern lines, with a loss of earnings of 20 per cent. per mile, reduced their operating expenses 25.7 per cent. The management of the Intercolonial could not have done so well as it did if it had not been saved the trouble of laying off numerous employees by having them voluntarily enlist in the army. It did not discharge these; it simply did not replace them.

Little Incentive to Officers

When a railway produces such results over a long period they may be immediately attributable to a number of causes, but these minor causes usually are themselves the effect of a few major causes. One of the major causes in this case has been that the officers in direct charge of the property have had little incentive to manage it well. The public and Parliament have not demanded this as the stockholders and directors of a railway company do. Consequently, there has been a feeling of comparative indifference regarding results on the part of the officers. Another of the major causes has been the influence of politics. This has been the major cause. The part which politics formerly played is freely admitted by the officers of the road, although they say that conditions are somewhat different now. The prevailing low rates have been made as a sop to the people, and especially to the French population, of the eastern provinces. "Almost every abuse known to railroading took root and flourished, such as underbilling—that is, permitting a favored shipper to load the cars with a larger quantity of goods than he paid for, while his competitors on the other side of politics were restricted to a standard load and mulcted for any excess; the granting of secret rebates; the maintenance of an excessive number of stations and employees in order to swell the political influence of the road at election times; absurd classifications; unjust tariffs; the acquisition of more or less useless branch lines to serve partisan ends, and so on."[1]

It was customary for the party in power to buy railway supplies only from its supporters; and the story is told of a dentist who engaged in the manufacture of a certain device expressly to market it on the Intercolonial by means of his political affiliations. It was common practice largely to increase the number of employees some weeks before election, and every officer of the road frequently had the experience of coming to his office and finding among his subordinates the faces of men he had never seen before, and who had been put on his payroll at the instance of politicians. If an influential politician wanted a man given a job on the railway he did not bother to take up the matter with the general manager or even with the division superintendent. He wrote a letter to the trainmaster or the roadmaster and ordered his friend and supporter employed. If an employee was discharged for incompetency or other good cause, he could usually get reinstated if he had political pull. When business fell off, politics made it impossible to reduce the number of employees and operating expenses proportionately. Political influence was used not only to secure excessively large and expensive passenger stations, but also unnecessary and unprofitable passenger and freight service. For example, when the present management came in it found that numerous passenger trains were being run into and out of St. John, Halifax, Sydney, and Newcastle, to enable leading citizens of these small cities to live in the "suburbs." Most of these trains were earning only fifteen to fifty cents per mile, but when the management tried to reduce the service it encountered a storm of opposition which soon became largely political.

Trying to Eliminate Politics

As already indicated, the present management is trying to eliminate political influences and to put the operation of the road on a business basis. But the effects of the old regime are still apparent, and, as has been shown, opposition instead of assistance is offered by the part of the public served by the Intercolonial, while very little help is received from the rest of the people of Canada.

[1] *Montreal Gazette*, October 21, 1915.

One of the arguments always advanced for government ownership is that the managements of state railways will and should strive rather to promote the welfare of the people than to earn profits; and it may be contended that to show that the Intercolonial's management has been dominated by politics, that its rates have been made too low, and that there has been waste in its construction and operation, proves nothing regarding the desirability of government ownership and management, because it takes no account of the influence which has been exerted on the development and prosperity of the territory which the road serves.

The question as to the amount and character of the influence which the Intercolonial has exerted on the development and prosperity of the maritime provinces is a somewhat difficult one to answer. It is easily demonstrable by official data regarding the changes in the population, the agriculture, and the industry of these provinces and of other parts of Canada and the United States, that progress in the territory served by the Intercolonial has been relatively small and slow. In fact, it probably has been as small and slow as in any other equally large territory in Canada or the United States which has any considerable natural resources. Doubtless, however, this is due to a combination of circumstances. The natural resources of the maritime provinces from either an agricultural or a manufacturing standpoint are not great, and their population is to a large extent naturally quite conservative. One thing may be said, however, with certainty. This is that the material progress made in the territory served by the Intercolonial has not been such as to support the argument that government management of railways will tend more strongly to promote the material well-being of the public than private management.

MORE COTTON FROM THE COTTON PLANTS.

It is hoped to get a greatly increased cotton crop from the same acreage by means of a method devised by Mr. John B. Hall, of Philadelphia, Pa., who has been recently awarded a patent on his system. There is a great deal of loss in the cotton fields in the shape of cotton bolls which, for one reason or other, never mature. Mr. Hall contemplates turning the pickers into the fields a little earlier than is usual and picking all the bolls before they open. They are then treated to a bath of a solution in which starch and talcum enter largely, and in a moderately warm temperature the bolls are artificially opened and the burden of fibre is removed in the usual manner. The cotton recovered in this manner is said to be superior to that allowed to remain longer on the plant, in that it has a beautiful luster. Another interesting feature of this process is that it is said to bring about the downfall of the boll weevil, which requires to be matured in the boll.—*Scientific American.*

SWEDISH COMMERCE.

The 1915 Year Book of the Swedish Chamber of Commerce for the United Kingdom has just been published. It is a volume replete with useful information on the commerce of Sweden. Apart from the reports of proceedings at the annual meeting of the chamber and other material of a similar description, the book contains a number of valuable trade reports on such subjects as the iron and steel trades, the timber trade, wood pulp trade, paper trade, etc., with articles on such themes as Swedish shipping during the war, the Swedish route to Russia, etc. There are several well-executed illustrations, a number of maps and numerous statistical tables, the whole being of value to any one who wishes to post himself on present conditions in Swedish trade and commerce.

POSSIBILITIES FOR TRADE IN RUSSIA

Conclusions Arrived At by the American-Russian Chamber of Commerce. Which Should Have Value to Canadian Exporters

THAT the war will open up great trade possibilities in Russia seems to be a foregone conclusion. Canadians have already, to a certain limited extent, become interested and they will be still more interested in developments in Russia after the war. In the United States, action has been taken in the direction of organizing to secure Russian business by the formation of the American-Russian Chamber of Commerce, with headquarters in New York.

The following article on possibilities for foreign trade in Russia is taken from the first bulletin of the new Chamber of Commerce and, while it is intended primarily to further the interests of American exporters, the information it contains should prove of value to Canadian exporters as well.

Germany's Position in Russia's Trade Before the War

It is well known that before the war Germany almost monopolized the Russian market. If we compare Russia's trade with Germany, and, for instance, with Great Britain, we see from 1870 through 1913 German's export to Russia increased from 39.5 per cent. to 52.6 per cent.* Germany's export to Russia in 1913 amounted to $332,622,000—$246,300,000 more than in 1870. In the meantime England's export to Russia decreased from 31 per cent. to 13.8 per cent.

The same is true of Russia's export to both countries. During these 43 years Russia's export to Germany increased from 21.1 per cent. to 31.8 per cent. At the end of this period Russia's export to Germany had increased $176,100,000. During the same time Russia's export to England dropped from 47.2 per cent. to 18.8 per cent.

Germany's Methods in Trading with Russia

A great part of Germany's success in Russia was due to the Russian-German Commercial Treaty existing before the war. This treaty favored German interests to such a degree that, on the one hand, before the war, in Russian economic literature the question was raised "Should Russia be Germany's colony any longer?"—and on the other hand, the German economist, Professor Schumacher, in a book issued not long ago, during the war, said that if Germany wins, there is no reason for her changing the fundamental principles of the treaty with Russia. Only some details, perhaps, need be changed.

But the Russian-German Commercial Treaty was only one of the conditions that made for Germany's success in dealing with Russia. The immediate reason for Germany's success was her wonderful method in trading.

English goods imported in Russia were always of better quality than German goods, but the English never considered the comparatively low buying power of the Russian population. English goods were always higher priced and did not present as great variety and novelty as the German product.

In dealing with Russia the English almost never sold on credit. All contracts with Russian houses were closed with the condition f.o.b. English port. That was something that went against all the customs of the Russian market. The largest and most reliable Russian houses avail themselves of the credit system very largely in buying goods. To ask them for payment, as the English did, about a month and a half or two months before seeing the goods, was surely fatal for English trade with Russia.

The Germans did the opposite. There was almost no difference to a Russian, dealing with a German or dealing with one of his own countrymen. German salesmen spoke Russian fluently, presented buyers with catalogues printed in Russian, with goods marketed according to the Russian system of measuring, with prices marked in roubles and kopeken. In addition to this, they gave Russian houses large and long time credit. All this built German success in trade with Russia.

Germany's Endeavor to Regain Russia's Business

Germany's successful trading with Russia, in the near past, is now the subject of attention in almost all commercially developed countries. Who will be Germany's successor in the Russian market? To whom will this splendid heritage fall? Germany is well aware of the importance of the Russian market, and in spite of the fact that Germany at the present time is fighting Russia, German business interests are making every possible effort to place themselves in a position to dominate the Russian market after the war. The Germans understand that if some other country does not replace them in the Russian market at once, that there is a possibility for Germany to gradually retake the foremost position in Russian trade after peace has been concluded and the feeling against Germany has somewhat subsided.

Not only are the German business interests developing their organizations for the purpose of regaining the Russian market, but Germany is also working indirectly through some of the neutral countries in Europe. During the war, the Swedish Electric Industry has been successful in developing an important market in Russia. According to the correspondent of the *Torgovo-Promyshlennaya Gazetta*, in the issue of February 17, 1916, the Germans had opened a large electric plant in one of the Swedish cities. By issuing a Swedish name, this German plant is now selling their own products in Russia—they are doing very well at the present time, and feel assured that they will be an extremely strong position in Russia during and after the war.

The same correspondent reports that many German industrial products are being sold from Sweden to Russia in masquerade form. German pencils (Johann-Faber) are being sold in Russia with various French, English, Swedish and Danish markings, and these markings breathe a real national spirit. The Danish mark, for instance, is Heimdal—the name of the famous Danish hero. In the same manner, other goods are being sold in Russia. Perhaps the most interesting illustration is the method employed by a German firm for selling German razors in Russia. The razors are wrapped in a paper bearing an English name, and the razor itself is marked "Mussel Razor Works," followed by the Russian words meaning "To a Brave Russian Soldier for distinguished services." These German razors are selling in large quantities in Russia to everybody who desires to send a gift to a friend at the front.

The Movement in Norway and Denmark

Although Germany will surely regain her place in the Russian market if some other country does not replace her at once and during the first years of peace, there is a strong movement on the part of other neutral countries in Europe to secure a portion of the Russian trade. This is particularly true of Norway and Denmark, which are watching the

*These and the following figures are taken with reference to the entire amount of Russia's export or import.

Russian market closely. During the last fourteen years, Norway has developed industrially to a remarkable degree. Forty years ago Norway's export of industrial products amounted to only 5,500,000 kr.—about 8 per cent. of Norway's entire export. In 1913 Norway was exporting industrial products amounting to 181,000,000 kr.—about 47 per cent. of her entire export trade. Encouraged by this development, the entire country is now covered by committees and organizations seeking the further development of Norway's industries and the leading representatives of Norway's business interests are making a very close study of the possibilities of the Russian market, and Norway will undoubtedly be a centre for the development of an export and trans-shipping trade to Russia.

The movement in Denmark is even stronger. At the beginning of 1916 a special course in the Russian language was introduced in the University of Copenhagen. In the Danish papers a series of serious and careful articles have appeared devoted to various phases of Russian life. Danish merchants and business people are going to Russia studying conditions, and Danish business organizations are making every effort to concentrate the attention of Danish business interests on the problems and the possibilities of the Russian market. Danish houses now print their catalogues in Russian and an especial "Danish Export Calendar" is now issued in the Russian language for distribution in Russia. The most popular Danish daily, the *Berlingshe Tidende*, is now issuing a special monthly edition in Russian devoted to Danish exports, while in Copenhagen we find a special weekly printed in Danish under the title of *Russia's Trade-Industrial News for Scandinavia.*

A few months ago in Denmark a special association of manufacturers of agricultural machinery was organized for the purpose of increasing the export of Danish agricultural machinery in Russia. In the fall of 1915, the Copenhagen Handicraft Association sent a special delegate to Russia for the purpose of studying the Russian market, and the recently published report of this delegate is full of interesting material in regard to the splendid possibilities of the Russian market and of the opportunities for the development of a close trade between Denmark and the Russian Empire.

Possibilities for American Trade with Russia

It is evident that many countries are looking forward to the Russian market after the war. Every country in Europe is awake to the potential possibilities of the Russian economic development and the business interests in these countries are planning to secure a share in the Russian market.

Germany's successor in the Russian market will be the country that is able to satisfy on the largest scale Russia's economic and financial needs. In the most expressive form, these needs have been formulated in the article of Professor M. I. Friedmann (one of Russia's authorities on questions of finance), published in the issue of February 3, 1916, in the *Torgovo-Promyshlennaya Gazetta.* "We absolutely must increase the production of our land," says Professor Friedman. "We must drain one region, irrigate another. We must cultivate immense territories of our land that until now have lain fallow. We must develop our timber industry, bring from underground our untold riches. We must cover Russia with means of transportation. We must build new industries develop the old. All this requires scientific study, intensive labor and enormous capital." The United States, because of her splendid economic strength and her financial position, is the country that is best able to help Russia in her industrial development. Naturally, Russia desires primarily to develop her own resources and her own industries. To this she must look for assistance from foreign capital. The neutral countries in Europe do not possess the necessary capital. Russia's allies, England and France, will hardly be in a position after the war to carry on an extensive financial development in Russia.

Under these circumstances, it is evident that the possibilities of American trade with Russia are closely connected with the possibilities for American capital in Russia. If Russia can be assured that the United States intends not only to attempt to fill the Russian market with American products, but also to assist Russia in the development of her own industries and thereby help Russia to export to the European market those products that the United States is not in a position to export, Russia will welcome a close economic relationship with this country. If such a program can be carried out, there is no question but that the bulk of the great purchases of equipment goods which Russia must make during the next ten or fifteen years will be purchased in the United States.

American business interests should realize this fact and should hasten to make as complete a study as possible of the Russian market and all Russian conditions. The German success in Russia has been built up on the adaptability of German merchants to the trade methods and conditions in Russia. The United States is in a position not only to profit by the example of Germany, but because of the executive ability, enterprise and initiative of this country's business men to surpass any European country in the development of its trade in Russia.

The American-Russian Chamber of Commerce is interested primarily in securing for American business interests a great share in the splendid rewards which the economic development of Russia promises. The securing of these rewards will be dependent upon the intelligence and wisdom of the methods which are used in meeting the Russian situation.

We are convinced that if the facts which are presented in this pamphlet are appreciated, and if American business interests make discreet and careful use of the opportunities now presented, that the Russian market will be opened wide to American trade, and that every product that Russia has received from other sources can be purchased in the United States.

Russia's market, the largest and richest market in the world, is now open. Many are trying to enter, but only the United States is fully able to meet the needs of the Russian economic expansion.

Russia is in sympathy with the United States and desires an economic rapprochement. It is essential, therefore, that this country should study the main features of the Russian market, to assimilate the business methods that have been used successfully in the past, and to begin its commercial and financial activity in Russia at once.

[Quite obviously, all the foregoing applies with equal, if not greater force to Canada.—EDITOR.]

MENTAL GRASSHOPPERS

Many of us waste fully one-fourth of our time and energy by constantly breaking away from the particular thing we are doing, to do or start something else—to return in a moment or so to finish what we left. We jump—mentally, physically, or both from one idea to another and back again all day long. In most cases this habit can be corrected, it is nothing more than thoughtlessness. And it should be corrected for such persons in office or shop are not only inefficient but have a tendency to disturb others. They are nothing more than grasshoppers.—*Exchange.*

A SAVINGS SYSTEM FOR FACTORIES

Explanation of a Plan Which Has Proved Successful in Several United States Establishments

By R. F. CORRY

(Reproduced from American Industries.)

THE teaching of thrift is of such vital importance, and so far-reaching in its effect both on the individual and the community, that the employer would do well to study the subject and make a strenuous effort to induce his employees to start a bank account.

Many people would save money if it were made easy for them, or if they could start with a very small amount, such as a dime or a quarter. Very few banks will start an account under one dollar, and those that advertise themselves as Dime Savings Banks do not strive to get the masses to deposit dimes. The man who could, and would, save a small part of his weekly wages, if the means were at hand, is handicapped by these conditions and never makes a beginning. He is thereby left without resources of any kind to meet the ordinary ills of life.

For the benefit of such firms as may be interested, the following plan, showing in detail how the system is established and operated, will produce excellent results, with a minimum of labor.

A small booklet outlining the plan, together with a talk on thrift, goes into the pay envelope. This gives the employees something to talk about and discuss before the next pay day, when a folder with the rules governing the system, and the thrift card, are inserted with their pay.

The employee signs this card, setting aside a fixed amount to be deducted from his wages each pay day. This may be as little as five cents. The trustee sends the card signed by the employee to the bank with the first deposit, and after filling in the other card files same for his records. On the reverse side of these cards are rulings, so arranged that a correct account may be kept by merely checking the dates. The bank having one card and the trustee the other, all errors may be traced, and duplicates issued in case of loss.

Thrift Certificates

When the employee has saved $5.00 he is given a thrift certificate, which he presents at the bank and may open an independent savings account. If he wishes to continue his thrift savings in the factory and have a stated amount deducted from his wages, he signs a new card, which authorizes the trustee to deduct a sum and transfer to his personal account whenever it amounts to $1.00.

In preparing the system, care has been taken to comply with banking laws throughout the country, in order to protect both the depositor and the trustee. It will be noticed that when the depositor signs a new card, which authorizes the trustee to deduct the money from his wages, but directs him to deposit it in a certain bank as trustee. This relieves the trustee from any responsibility in case of a bank failure. The depositor knows exactly which bank his money is going in and where he will eventually have his savings account. As the forms are furnished through a local bank, the system may be tried without expense to the employer.

Let us consider what is gained by the operation of this system. First, should the employee, under present conditions, desire to open a savings account, he must start with at least $1.00. As he goes to work before the bank opens, and leaves after it closes, he must either take some of his working time or his noon hour to make a deposit. Nearly all savings institutions are open one evening a week, but after a man has finished a day's work he is not over-anxious to spend an evening going to a bank, or he may live at so great a distance that he would have to ride, in which case he expends for car fare the interest he would receive on $2.50 for one year at four per cent, consequently, unless he could deposit more than $2.50 each time he is merely keeping his money in a safe place without profit to himself. This is discouraging.

We know that the naturally thrifty person will find ways and means of getting and keeping a bank account—they do not require so much assistance; but there is a vast army of young men and women who do not feel any responsibility and cannot see the necessity of saving money so long as they are well and working. To reach these we must make saving easy. The main thing is *to get a start*, and then keep it up in a systematic manner.

With this system, a start may be made with any amount, at absolutely no expense of time or labor. One workman does not know how much the other is saving. If the start is made with ten cents one is at liberty to increase the amount at any time, or make additional savings any week that he can afford it. When one considers that over $54,000,000 was saved last year through the medium of the Christmas Clubs operated

THRIFT CARD Uplifthrift System Patented

No..... Date.....

I hereby authorize the pay clerk to deduct the sum of $.....from my wages each pay day and to deposit same in the..... as Trustee and until I have saved

$5.00 **FIVE DOLLARS** $5.00

and then transfer to an independent savings account in my name according to the usual rules and regulations of the above bank, and the rules and regulations of the Uplifthrift System, which I hereby agree and subscribe to.

Name .....

Address .....

Trustee sends this card to Bank with first deposit.

THRIFT CARD Uplifthrift System Patented

No..... Date.....

Name .....

Address .....

The above party has authorized the pay clerk to deduct the sum of $ from his or her wages each week and deposit same in the..... ..... in a Trustee account until said party has saved

FIVE DOLLARS

according to the rules and regulations of the Uplifthrift System.

.....

Trustee.

Trustee files this card for your record.

Reproduction of the Thrift Card by which the savings account is established and maintained.

by many banks, it is apparent that were thrift systems placed in factories what a vast amount would accumulate which is now frittered away, because the employee cannot or will not, take the trouble to put aside small amounts, if it requires any effort on his part.

Effects of the Thrift Habit

Thrift is the foundation of character. The employee who learns to manage his personal affairs so that he may save part of his earnings, will use, after the habit is once formed, the same care in saving his employer's time and material. As his savings account grows, he becomes interested in his town. The fact that he has a few dollars in the bank soon gives him a feeling of security, which in turn makes him a safe man. As his mind is on his work, the work improves, and accidents diminish.

The man with a bank account is able to stay with a concern during a period of depression, or when the shop has a dull season and is working only part time. According to statistics, ninety-eight per cent. of wage earners spend every cent they make between pay days. As soon as they have sickness or slack time they cannot pay their bills, and as soon as they use up what little credit they have many jump to a new town, often just when the tide turns and the shop is getting busy. The argument is that they owe so much money it will take all their wages for some time to come to pay old bills. It is to steady this class of labor that saving should be made easy. If an employer, by the expenditure of a little time for clerical work of some member of his office force, can induce and help a percentage of his employees to save, is he not securing the nucleus of a steady class of help—men and women who can be depended on to stick? The larger their bank account grows, the surer he may be of their services. If you had an important place to fill and two applicants for the job, of equal ability, one that you knew had a savings account, and one that you knew had nothing ahead, which would you employ? Would it not be wise to make an effort to lift all your employees to the level of your choice?

While there is no negative side to the question of promoting thrift in factories, we do not find the unions over-anxious to have it introduced. They say, "Let the bank come to us on pay day if they want business," but advise against having the employer deduct anything from the pay. Yet this is the strongest part of the system. The depositor directs a fixed sum to be deposited and taken from his wages, and has no further trouble. As soon as he has $5.00 to his credit he gets his independent bank account, and the money is under his personal control—to withdraw or increase, as he sees fit.

The Practice of Systematic Saving

If one leaves it to an employee's discretion as to when and where he will deposit or save these small beginnings, the object sought will be defeated, as with the best intentions in the world, the man or woman will miss some weeks, and it is only by systematic savings that the habit of thrift is formed. If the employee is making $10 a week and directs that twenty-five cents be put in his savings account, he adjusts himself to getting and using $9.75, and really does not miss the quarter, and in a short time gets his bank book with $5 to his credit, while if he is allowed to do as he pleases the money is a long time accumulating.

Saving money is a habit, and when once formed, leads to independence. It is to the employer's interest to have men who know the value of money and self-control in a position of independence; and the surest and safest way is to encourage habits of thrift, for as soon as a person gets a start in the world and owns a piece of real estate, a bank account, or a bond or two, he begins to see things from a different angle, and, almost without knowing it, assumes capitalistic ideas. While we may not agree with the politics of the plutocrat, we do know that the essential basis of all business, the growth and development of the city or country, depend largely on capital, and that section that can show the greatest number of individuals with homes or bank accounts is the best place to cultivate for a continued growth. We may increase our army and build the finest navy in the world, but if the masses of us are not prepared to live and pay our way during a time of stress, we are shirking our duty and soon become a burden to the Government. The practice of thrift not only prepares one for misfortune, but is the best insurance for peace and continued prosperity.

The first safety talk and devices were opposed as not being worth while, yet a report of the Carnegie Steel Company quotes a reduction in accidents in 1914 as compared with 1913 as follows:

Decrease in fatal accidents	49.4%
Decrease in serious accidents	34.5%
Decrease in minor accidents	29.5%
Decrease in lost time	45.7%

Take the last item—lost time. The man or woman who is spending all he or she earns between pay days is living on a precipice, with the prospect of a slide. With the least rumor of trouble, either in his home or factory, he at once has to think of some way to tide him over the trouble. He annoys his fellow-workmen trying to borrow money, and were figures available, the time lost over money troubles in any factory or office, the percentage of accidents due directly to the employee having his mind on his debts, when it should be on his work, would make such a showing that thrift would soon have a prominent place in all welfare and safety work. It has been proven conclusively that the most efficient means of preventing accidents has been the personal education of the employee. To put a guard on a machine and tell the operator that it was for his safety is not enough; but when you show him the danger, and explain why it is guarded, he begins to take a personal interest.

So it is with the saving habit. We all know that a bank account is essential, but hate to deprive ourselves of any luxury or comfort to make the start.

A READABLE HOUSE ORGAN

The July-August issue of *Yates-Quality*, the house organ of the P. B. Yates Machine Co., Beloit, Wisconsin, and Hamilton, Ont., is one of the most ambitious numbers of this periodical yet produced. Filled with illustrations, which are all excellently printed, it has a strong appeal for the man interested in woodworking machinery. The accompanying articles, supplying many valuable hints to woodworkers, will be found decidedly useful.

AN ANNIVERSARY BOOKLET.

With the title "The Remington Centennial Book," an attractive little thirty-two page booklet has been prepared and issued by the Remington Arms-Union Metallic Co. It is intended to mark the hundredth anniversary of the manufacture of the Remington rifle, and the story of how the first rifle came to be made is told in an entertaining manner. As a contribution to the industrial history of America, the contents of the booklet are of value, for conditions in the early part of the nineteenth century are described with delicacy and in detail. The illustrations add considerably to the interest of the publication.

FACTORY FIRE DRILLS

Valuable Advice as to How to Organize the Factory Force in Order to Meet Fire Emergencies

By CHARLES W. MITCHELL

(Reproduced from Safety Engineering.)

THE information presented herewith on fire drills has been gained through conducting and supervising a large number of fire drills in factory buildings in the city of New York, while acting as fire drill instructor and supervisor for the Fire Prevention Bureau, Fire Department.

The information is intended to cover only general conditions, as it is impossible to draft a set of regulations to cover every condition met with in practice.

Drill Organization and Time Required to Vacate Building

For safe escape in case of fire a fire exit drill organization should be complete in all details and each member should thoroughly understand his or her particular duties.

Placards should be posted on the walls with the names of the members of the fire drill organization and the duties to which they are assigned.

A permanent record of all fire drills held should be made for the information of the authorities.

Irrespective of how quickly the occupants may wish to escape, the time required is governed by the number of means of escape and their size.

Stairways where occupants can march in double file will accommodate about 100 persons for exit per minute, thus 300 people in a six-story building can vacate the building by means of one stairway wide enough to accommodate columns in double file in three minutes under favorable conditions.

On outside fire escapes, where the angle of the ladders is about forty-five or fifty degrees and provided with a swinging or cantilever stairway from the first balcony to the sidewalk, wide enough only to permit occupants to march in single file, about 30 persons per minute can make their escape.

The figures given are based on actual experience. Therefore, no matter how rapidly the occupants may attempt to escape, the time in getting out of the building is governed by the number of persons passing through the exits leading to the street, roof or adjoining property.

To attempt to crowd the exits usually means that the escape is retarded. It may cause a panic if the occupants persist in trying to get out in a haphazard manner. The quickest way to get out is to go in an orderly manner. To accomplish this it is necessary to have stair guards, one at each stairway and fire escape landing to control the movements of the occupants; one monitor at each floor exit to govern the number of occupants entering the stairways and fire escapes, also searchers to search all closets and see that everyone leaves the floor.

Where possible, a fire brigade of two or three men should be assigned for each floor to handle fire buckets, extinguishers, etc. Some of the occupants on each floor should be trained to carry out persons who have fainted or are physically incapable of making a quick escape in time of danger.

In case of a fire on the first story or in the cellar, the chance of the occupants getting out is very good, providing they are alarmed before the fire has a chance to make headway.

Escape from Upper Floors

Where the fire occurs on one of the upper floors, the occupants should remember that if they can get to one story below the fire in a fireproof building, and two stories below in a non-fireproof building, they are safe long enough to make an easy escape.

This should be remembered, especially when using the fire escape. For instance, a fire breaking out in the fifth story of a seven-story building, the occupants using the fire escape, instead of continuing down the fire escape to the sidewalk, can get in off the fire escape on the third story and feel safe to wait there until they can use the stairways.

It is much easier for women and girls to travel down two or three steep flights of fire escape stairs than to go all the way to the sidewalk. The occupants coming down the stairs, if they find the stairways congested, can get in on the floors below the fire, permitting those on the floor on fire and above it, to escape from the danger zone.

In a fireproof building, if the occupants should find themselves trapped above a fire, they should close all doors and windows to prevent smoke, heat or fire from spreading from floor to floor. An overlapped fire is one where fire is communicated to other floors through the outside windows. To prevent this all windows above the fire should be closed in case the occupants are trapped to prevent drafts.

Nearly all fireproof buildings have one or two good elevators, which can be used to advantage in removing people above the fire when their escape is cut off. The elevators must not be overcrowded, otherwise the elevator safety devices will work, stopping the elevator in the shaft. Elevators, except for the use of the fire department, the removal of disabled persons or as an emergency escape, should never be used as a regular means of escape in case of fire.

At the Triangle factory fire many girls were saved by one policeman, who directed them in on the sixth story from the rear fire escape. Had they continued to the bottom of the escape, as they doubtless would have done, many of them might have fainted and fallen from the escape.

Persons below a fire need have no fear and should give all possible opportunity to those on the floor on fire and above it, to escape first.

Rarely Any Life Lost Below a Fire

It rarely happens that any life is lost on any floor below where a fire starts, so occupants below the story on fire should give those above a chance to escape.

To carry out the aforementioned features successfully requires a code-ringing fire alarm system which will sound the number of the floor on which the box is operated to all the occupants throughout the building. Otherwise it would be impossible for the majority of occupants to know where the alarm was sounded from. The maximum time required to sound the first round of signals is 15 seconds. Uusually four rounds of signals are sent in. It usually takes from 15 to 18 seconds to travel from one floor to another, so the occupants could not go far before knowing the location of the fire box operated.

When the Alarm Sounds

When the alarm sounds the occupants should clear all aisles and assemble in proper order with a monitor at the head of each squad. A squad should consist of about 20 persons. Squads should not march until ordered to do so by the monitors. It is absolutely necessary to do this as it is the only way in which panic can be avoided. If all the occupants attempt to get out of the exits at once, it is safe to assume that it will take nearly twice as long as if they marched out in an orderly manner.

The fire brigade on the floor from which the alarm is given should get water buckets and extinguishers and assemble at the box pulled. All other fire brigades should leave the building. The searchers should clear the floors of all occupants. The stairguards, monitors, etc., should be the last to vacate the building.

The occupants should keep their regular formation on the sidewalk or roof where escape can be made to adjoining roofs; only returning to the building on a signal from some authorized person who has assured himself there is no danger. Each floor should have a floor captain who should be in full charge of his floor.

When fire drills are held it is impossible to distinguish between an alarm for fire or one for practice drills. All drills should be conducted as though the alarm sounded was for fire.

The average total time required to vacate and return to a building during a drill in a 6 or 7-story building is about ten minutes, which figures about two hours a year. Longer than this is time wasted.

After a fire drill is properly instituted, there is little trouble to conduct it once a month.

Many factories present special features which must be taken into consideration when a drill is held, particularly where damage is done to goods in process of manufacture when machines are stopped instantly.

A condition of this kind requires expert advice, the construction of the building usually being a deciding factor as to the advisability of leaving some employees in the building. In a tenant factory it is necessary to leave watchmen on each floor to prevent theft.

It is usually considered when absolutely necessary to leave a few persons in the building, that in case of real danger, the fire department could rescue them without great difficulty, provided they were not 75 feet above the sidewalk. It is an easy matter to rescue a few persons, but exceedingly difficult to rescue a large number.

The employees should at times, especially during the lunch period, leave and enter the building by means of the outside fire escapes, so as to become familiar with their use and keep them in good order.

A fire drill in the factory building where the exits are adequate and in good order, and the drill is supplemented by a reliable, closed-circuit, code-ringing fire alarm system, will furnish excellent protection for life and property.

A Few Words of Caution

Don't neglect to make sure that all doors open in the direction of traffic in escape from fire. This applies to all doors on partitions as well as all exit doors.

A daily inspection on each floor should be made of all doors, fire buckets, extinguishers, lighting of stairways, etc.

Do not store rubbish in passageways and exits.

Have an exit sign with letters at least 8 inches high placed at each exit.

Make sure that all door locks are in good order and that door knobs are rigidly secured.

Insist that the drill be performed in a quick, orderly manner. Employees should not carry on useless conversation during the drill.

Employees should always bear in mind that the stairway or fire escape may be cut off by fire and smoke. They should be familiar with all means of egress so that escape can be safely made.

All wire glass windows opening on fire escapes should be tested daily to insure their being in proper working order so that in case of emergency they can be opened easily.

Doors on stairways should be self-closing and should be kept closed at all times when not in use.

In case of fire the alarm should be sounded immediately and the floor vacated quickly. All doors and fire escape windows should be closed by the last person leaving to prevent smoke and heat cutting off the escape of the occupants above the fire.

Doors to fireproof stairways should never be left open. A fire may occur near one of the doors and cut off the stairway.

In case you are in a smoke-filled room get down on your hands and knees. Escape may possibly be made that way.

Should you use a gas fire extinguisher in a small room, get out of the room quickly.

Do not stint water in buckets nor fire extinguishers. A conflagration is a small fire neglected.

When elevators are in fireproof shafts, have the elevator operators remove all physically disabled people during fire drills.

The fire alarm system should direct him to which floor to go first.

Several occupants of each floor should be taught to carry disabled persons without assistance, similar to the method employed by firemen.

Teach all your employees where the city fire box is located and how to operate it. The city fire box will not operate unless the hook on the inside door is pulled all the way down.

In case you use the telephone to call the fire department, send some one to the nearest street box to operate it, waiting there until the fire companies arrive to direct them to the fire.

INDUSTRIAL USES OF HYDRO-ELECTRIC POWER

By J. B. CHALLIES
Superintendent Dominion Water Power Branch

(Reproduced from the Bulletin of the Department of Trade and Commerce.)

At the present time the great steel mills of this continent are absolutely dependent upon the electric furnace for the production of alloys. The automobile manufacturer is dependent upon another electric furnace production, aluminum, for car bodies. The manufacturer of steel products needs these materials for making tools, and countless factories require abrasives which cannot now be imported, and which are now being produced in the United States, at any rate, only by electric processes. Without acetylene gas and graphite, and other electric products, many existing industries would be absolutely crippled.

So far as the products of electro-chemistry are concerned, it is found that the surgeon and the doctor look to electric plants for chloroform and disinfectants; the cotton and the paper manufacturer need the bleaches produced by electricity; the user of soap patronizes the electro-chemical etsablishment, as does every user of matches. Gold and silver mining of the west requires electric products to assure a profit, and it is only lately that the United States, cut off from its supply of German dyes, has found itself dependent upon electric products to supply the deficiency, in part at any rate.

Would Reduce Prices

These are but a few of the industries dependent upon cheap electric power. The further development in either Canada or the United States, or the inauguration of such processes in Canada, is very largely, if not altogether dependent upon cheap available, dependable power. The source of such power is admittedly, for a very large portion of our country, water-power. The development of water-power in making available a supply of cheap hydro-electric energy in various parts of the Dominion would probably result in the reduction of the cost to the consumers of countless articles of every-day use, which, to the man on the street, are in no way associated with hydro-electric development.

To be more specific, the manufacture of steel is one of the greatest of the United States industries, and is fast becoming a very important one for Canada. To-day, electrically produced ferro-silicon is used as an alloy by most steel manufacturers, with the result that the Bessemer process is fast becoming obsolete. The essential element in the manufacture of armour plate and armour-piercing projectiles, is introduced into steel by the alloy, ferro-chromium, strictly an electric furnace product.

Ferro-chrome, another product of the electric furnace, has made possible the manufacture of high-speed tools, which in turn have tripled the capacity of our machine shops and enhanced the efficiency of our mechanics. It has cut to one-third the capital invested in tools to accomplish a given volume of work.

In the absence of chromium, tungsten, vanadium and molybdenum, all alloys made by electrical processes, the builders of American battleships and other weapons of national defence, and a large portion of our Canadian steel and metal-working industries and other industries, would be in the condition of twenty years ago. The electrical industry itself is largely dependent upon silicon steel, a product that does not age and does not wear.

Aeroplanes and Aluminum

The development of aeroplanes also calls for aluminum, and only with the abundant production of cheap electric energy from water-power will the price of aluminum kitchen utensils come within the reach of every housewife.

At the outbreak of the war, we were cut off from the supply of Greek and Turkish emery. To-day the metal-working industries of this country are dependent almost entirely upon electric furnace abrasives, carborundum and alundum. The manufacturer of agricultural machinery, locomotives, fire-arms, milling machinery, automobiles, and countless other metal products must have these abrasives, and they can now be made only where waterpower is developed cheaply.

The electric furnace also turns out calcium carbide, the only source of acetylene, which is being so extensively used in Canada. The oxy-acetylene flame has become of intense value in the welding of metals and the cutting of steel. This same calcium carbide is the important factor in the fixation of atmospheric nitrogen, and is the source of supply upon which we may have to rely for nitric acid and nitrates employed in making munitions of war and fertilizers.

All the artificial graphite used in the world to-day is produced at Niagara Falls, by cheap water-power. Its uses are manifold. Practically the whole supply of abrasives on this continent is from Niagara.



Progress on the construction of the west wing of the new Union Station in Toronto

Chlorine of First Importance

Considering the products of electro-chemistry alone, chlorine stands out as of first importance. The sterilization of water supplies of countless cities has been made possible by the use of bleaching powder or hypochlorite, and in communities where this is used extensively, typhoid has been largely eliminated. The armies of Europe use chlorine to avert typhoid, and other chlorine products, including chloroform, are used surgically, both as anesthetics and antiseptics. This same chlorine, or bleach, makes possible the manufacture of white cotton goods and white writing paper. Other products of chlorine, produced electrically, enter into the manufacture of soaps. Even into fire extinguishers goes this product of cheap electricity.

To meet the shortage of coal-tar dyes, by the combination of chlorine with coal-tar benzon and tuluol, there is now beginning to be produced quantities of those necessary intermediates formerly made and exported from Germany.

Metallic sodium, also a product of electricity, is the basis for sodium peroxide, which is used in generating oxygen for hospitals, for laboratories, and for submarines and mine-rescue apparatus. It also enters into the manufacture of hydrogen peroxide. Without sodium cyanide, many gold and silver mines could not possibly operate at a profit.

These are but a few of the products of every day use which will largely depend upon water-power. Many of these a few years ago, had no known value. What other products remain to be developed with the growth of electricity, no one can predict.

There can be no question regarding the fundamental and essential relation of water-power to the economic and industrial situation in Canada.

DUPONT PRODUCTS BOOK

In a foreword to their latest Products Book, or list of manufactures, E. I. DuPont de Nemours & Company explain that it is a mistake to associate their name entirely with munitions of war. Sales of military powders represent only a small portion of the company's business in explosives. The latter are used in construction work, in mining and clearing land, as well as in warfare. But over and above the manufacture of explosives the company is engaged in the production of many other commodities, such as leather substitutes, ivory and shell substitutes and chemicals. The Products Book shows altogether a production of 251 distinct commodities. In itself it illustrates the value of at least one commodity, for it is bound in book-finish fabrikoid, a material that is daily gaining favor with bookbinders.

TARIFF

By J. R. K. BRISTOL

TO MANUFACTURERS WHO CONTEMPLATE ENGAGING IN EXPORT BUSINESS

Are you aware that you have the privilege of practically duty free materials for manufacturing for export? Full information on this matter can be obtained from the Customs Department, Ottawa; or from the Manager, The Tariff Department, Canadian Manufacturers Association, Toronto

War Measures.—Prohibited Exports

The following articles have been added by order-in-Council to the list of articles which are prohibited to be exported from Canada to all destinations other than the United Kingdom, British Possessions and Protectorates, viz.:

Mica and Micanite.
Fusel Oil (Amyl Alcohol).
Plumbago crucibles or plumbago in a form suitable (whether after refining or otherwise) for the manufacture of or for use as crucibles or foundry facings.

Also, the following articles have been added to the list of goods which are prohibited to be exported from Canada to all destinations in foreign countries in Europe and on the Mediterranean and Black Seas, other than France, Russia (except Baltic ports), Italy, Spain and Portugal, viz.:

Rubber, goods made partly of.
Tin, manufactures of, the following:
Tin plates or tin canisters,
Tin boxes made therefrom, suitable for packing food.
Tin foil,
Solder,
Babbitts metal.
Type metal,
Any metallic alloy containing tin.

Ships' Clearances

The following instruction relative to ships' clearances has been issued by the Commissioner of Customs, Ottawa, to Collectors of Customs, viz.:

"It has been reported to the Department of Marine and Fisheries that when the registry of a ship registered in Canada is being transferred to a British port outside of Canada, Canadian Customs officers have deemed the transfer to be complete as soon as advice of it has been sent to the intended port of registry, and have been granting clearances to such ships without regard to the requirements of the Canada Shipping Act respecting Certificated Officers.

"Such, however, is not the case. A transfer of registry from the existing port to the intended port of registry is not completed and does not take effect until a new Certificate of Registry has been granted at the port of transfer. Till then the vessel should be regarded as remaining on the register at the existing port of registry.

"Under the power contained in Sections 8 and 9 of the Canada Shipping Act, Customs officers should require the production of the vessel's Certificate of Registry when clearance is being sought, and if the certificate is issued from a Canadian port of registry they must see that the vessel complies with the requirements of the Canada Shipping Act as regards certificated masters, mates and engineers."

Trading With the Enemy

By a special proclamation, all persons and corporations resident or carrying on business or being in the Dominion of Canada are prohibited from trading with G. F. Schloetelborg, Seattle, Wash, U.S.A. This party also is stated to be in business at Nome, Alaska.

Although Mr. Schloetelborg is the only person in the United States with whom persons in Canada are forbidden to trade, there are other persons or concerns in the United States against whom the United Kingdom has prohibited all persons or bodies of persons, incorporated or unincorporated, resident, carrying on business or being in the United Kingdom from trading, the names of such persons or firms being as follows:

Bauer, Philipp, & Company, 68 Broad Street, New York City.
Beer, Sondheimer & Company, New York.
Blumenthal, Simon R. (of Zimmerman & Forshay).
Botzow, Herman (of O. C. Kanzow & Company).
Brasch & Rothenstein, Inc., 32 Broadway, New York.
Bunge, Mauricio (of Maclaren & Gentles, Inc.).
Burin, Alf. (of Brasch & Rothenstein, Inc.).
Carlowitz & Company, 82 Beaver Street and 35 West Houston Street, New York.
Cullen, Charles, Ocala, Florida.
Czech, Armin (of International Import and Export Co.).
Dietzgen, Eugene, Company, 166 W. Monroe Street, Chicago, and 218 E. 23rd Street, New York City.
Electro Bleaching Gas Company, The, Buffalo Avenue and Union Street, Niagara Falls, and 25 Madison Avenue, New York City.
Erlanger, E. H., 60 Wall Street, New York City.
Falk, Carlos (of Maclaren & Gentles, Inc.).
Goldschmidt Chemical Company, 60 Wall Street, New York City.
Goldschmidt Detinning Company, 60 Wall Street, New York City.
Goldschmidt Thermit Company, 90 West Street, New York City.
Gravenhorst & Company, 96 Wall Street, New York City.
Grubnau, Carl, & Son, 144 Arch Street, Philadelphia, Pa.; 74 Wall Street, New York, and Boston, Mass.
Gubelman, Oscar L. (of Knauth, Nachod & Kuhne).
Hardy, Charles, 50 Church Street, New York City.
Hasenclever & Company, 24 State Street, New York City.
Hasenclever, Joh., Bernhardt & Soehne, 21 State Street, New York City.
Hauser, Morgan H. (of Zimmerman & Forshay).
Hirsch, Alfredo (of Maclaren & Gentles, Inc.).
Hirschland, Franz H. (of Goldschmidt Thermit Company).
Howe, Robert W. (of Brasch & Rothenstein, Inc.).
Humburg, William E., 25 Beaver Street, New York City.
International Hide & Skin Company, 59 Frankfort Street, New York City.

International Import & Export Company, 136 South Fourth Street, Philadelphia, Pa.
Isaacs, J. (of John Simon & Brothers).
Jaffe, Max, 15 William Street, New York City.
Kahl, J. A., 82 Beaver Street, New York City.
Kanzow, O. C., & Company, 11 Broadway, New York City.
Kanzow, Otto C. (of O. C. Kanzow & Company).
Kempner, H., Cotton Exchange, Galveston, Texas.
Knauth, Nachod & Kuhne, 15 William Street, New York City.
Knauth, Mary I. (of Knauth, Nachod & Kuhne).
Knauth, Wilhelm (of Knauth, Nachod & Kuhne).
Maclaren & Gentles, Inc., 222 Produce Exchange, New York City.
McNear, George W., Inc., Insurance Exchange Building, 433 California Street, San Francisco, Cal.
Magenheimer, A., 68 Broad Street, New York.
Maier, Marx, 200 Fifth Avenue, New York City.
Merchants' Colonial Corporation, 45 William Street, New York.
Muller, Carl (of Muller, Schall & Company).
Muller, Ernest (of Schuchardt & Schutte).
Muller, Schall & Company, 45 William Street, New York City.
Muller-Schall, Frederick (of Muller, Schall & Company).
Nachod, Maris, 15 William Street, New York City.
National Zinc Company, 2 Stone Street, New York City.
Neuhaus, Richard (of the Electro Bleaching Gas Company).
Neumond, K. & E., 25 Broad Street, New York City.
Newton, Rollin C., 15 William Street, New York City.
Norfolk Refining and Smelting Company, Virginia.
Orenstein & Koppel, Pennsylvania.
Pavenstedt, Edmund (of Muller, Schall & Company).
Perutz, Leopold, 17 Battery Place, New York City.
Petroleum Products Company of California, Inc., San Francisco, Cal.
Rees, Louis J. (of Zimmerman & Forshay).
Reuter, Broeckelman & Company, 59 Pearl Street, New York City.
Richter, Alfred (of Reuter, Broeckelman & Company).
Roessler & Hasslacher Chemical Company, 100 William Street and 14 Jay Street, New York City.
Rubber & Guayule Agency, Inc., 108 Walter Street, New York City.
Rushmore, Townsend, 82 Beaver Street, New York City.
Schall, William, Jr. (of Muller, Schall & Company).
Schenker & Company, 17 Battery Place, New York City.
Schloetelborg, G. F., 318 Globe Buildings, Seattle, Wash.
Schmidt, Paul (of Rubber and Guayule Agency, Inc.).
Schuchardt & Schutte, 90 West Street, New York City.
Schutte, Bunemann & Company, 15 William Street, New York City.
Scully, John S. (of Zimmerman & Forshay).
Siemssen & Company, 82 Beaver Street, New York City.
Simon, John, & Bros., Cotton Exchange Buildings, 15 William Street, New York City.
Sonneborn, L., Sons, Inc., 262 Pearl Street and 206 Water Street, New York City.
Southern Products Trading Company, Cotton Exchange Building, 15 William Street, New York City.
Stegemann, Edward, Jr. (of Brasch & Rothenstein, Inc.).
Superior Export Company, Inc., 90 West Street, New York City.
Texas Export & Import Company, Galveston.
Ulrich, Ernst, 15 William Street, New York City.
Weber, Edward (of Rubber & Guayule Agency, Inc.).
Wehrenberg, Otto (of Philipp Bauer & Company).
Weingardt, Arend H., 15 William Street and 120 Broadway, New York City.
Zimmerman & Forshay, 9 Wall Street, New York City.
Zimmerman, Leopold (of Zimmerman & Forshay).

Russia

DUTY FREE—IMPORTATION OF MATCHES THROUGH THE MANTCHURI CUSTOM HOUSE

With reference to the notice at page 189 of the *Board of Trade Journal* for the 20th July, the Board of Trade are in receipt, through the Foreign Office, of information to the effect that the "Official Bulletin of Laws" of Petrograd for the 2nd-15th July, publishes a Decree of the Minister of Finance, dated the 1st-14th July, authorizing, until the 1st-14th January, 1917, the import (free of Customs duty) into the Empire from abroad, via Custom House of Mantchuri, of safety matches to the amount of 30,000,000 boxes containing not more than 75 matches each.—*Board of Trade Journal*, London, England.

List of Machines, Appliances, etc., for the Siberian and Ural Gold Mining Industries Admitted Free of Customs Duty

With reference to the notices in the *Board of Trade Journal* for the 22nd June (page 830) and the 27th July (pages 258-259), the Board of Trade are in receipt, through the Foreign Office, of information to the effect that the official "Bulletin of Laws" of Petrograd of 28th June-11th July, publishes a Decree of the Minister of Commerce, dated 22nd June-5th July, giving a list (as follows) of the machines, apparatus, appliances, etc., which are to be admitted, for a period of ten years, free of Customs duties, for the requirements of the Siberian and Ural gold mining industries, in accordance with the Imperial Decree of 13th-26th May, 1916:

1. Dredges complete with all machines, boilers, engines, pontoons and accessories, fitted together or otherwise, according to specifications furnished by the sellers or by the works constructing the machines, apparatus, accessories and their parts.

2. In dredges driven by electricity: dynamos, electric motors with cables and distributing arrangements, protecting and measuring appliances; transformers; electric stations, to be placed on the river bank or in barges and developing power for the engines on the dredge; all steam engines, boilers, motors at the stations, electric generators, power conducting apparatus, and in general everything necessary for the fitting up of the station.

3. Parts of dredges (Clause 1), whether imported with them or separately, viz.: (*a*) Pontoon parts, steel, iron or wooden, viz., steel and iron sheets, iron assorted, sheared, drilled or punched; pile supports, slippers for them, frames, bolts, etc.; the bucket lead with all appurtenances, viz., brackets, beams, rollers, bucket chain line, scoops, scoop bolts, and steel and iron lips for buckets and ropes, rubber belts, upper and lower drums, bearing blocks, pinion wheels and bearings, hoist of the upper drum, hoisting mechanism of the bucket lead (winch, tooth gearing). (*b*) Parts of the washing apparatus; trommels with friction gearing, gold-catching tables and sluices, screens for them, discharging bin, spraying pipe, steel sheet screens; trommel fittings, including rollers and tooth gearing. (*c*) Parts of tailings discharge apparatus, gravel and sand conveyors, gravel elevators, hoists for conveyors. (*d*) Parts of the dredging control; main hoisting gear pertaining to the set of trommels and cables, piles, admission gear rods, steel ropes, foundation plates and bolts. (*e*) Parts of dredge adjuncts; pumps, pipes, valves, hoists, belting, accessories for heating and fire ser-

vice appliances. (*f*) Parts of electrical equipment for electrical dredges; electric stations on the bank or on a special barge for serving the dredge (engines, dynamo engines, switchboards, protecting and measuring appliances, transformers, cables, electro-motors). (*g*) Parts of the steam dredge; steam boilers, engines, condensers, and driving gear.

4. Excavators complete with all machines, boilers, mechanism, washing arrangements, electro-locomotives, steam locomotives and appliances for removing turf and overburden, except rails and trucks, according to the specifications furnished by the sellers or works constructing the excavators.

5. Parts of the above (Clause 4), whether imported with the machines or apparatus or separately, viz., buckets, bosses, bolts, drums, chains, steel lips for buckets, washing and catching apparatus, electro-locomotives, etc.; parts of boilers, engines, motors and electro-locomotives on the excavators.

6. Appurtenances and mechanism for prospecting dredging areas; all kinds of drilling apparatus; steam, electrical, hand, animal power—with all accessories; drill hole piping, sleeves, drilling bits, and suction pumps, slippers, ropes and pulleys, according to specifications furnished by the sellers or works.

7. Parts of the above (Clause 6), imported separately or otherwise, viz., drill hole piping, sleeves, drilling bits, sand suction pumps, nuts, slippers, keys, ropes, pulleys, four-wheeled drill carriages, head frames, winches, hand and all other, with their accessories; counterbalances, with pulleys, steam engines driving the drilling and winch mechanism, steam boilers, electro-motors, rheostats, dynamos.

8. Apparatus, appliances, machines and mechanism for crushing gold ores and for extracting from them gold by chemical processes, viz., crushers, rolls, Chilian mills, stamps, mortar boxes, screens, transporters for hoisting ore, automatic feeders, metallic and other appliances for catching gold, sand pumps, cyanide solutions, tubular, spherical and other mills; feeders for passing ore and semi-products to the crushing and extracting appliances; levellers, classifiers, with all their accessories; metal vats and bins for collecting slime and solutions, filter presses, with their filter frames and fittings; vacuum filters and agitators, with their fittings; air compressors for agitating slime, vacuum pumps, air receivers, mechanical mixers, piping, with connecting parts and fittings and bolts; motors for driving the above appliances; appurtenances for smelting residues and for cleansing gold.

9. Parts of apparatus, appliances, machines and mechanism for crushing gold ores, and for extracting gold by chemical processes (Clause 8), whether imported with the above or separately, viz., bushing, wearing plates, gold-catching apparatus, fittings, pipes, flanges with connecting parts, dies, tires, mill runners, shafts, cams, tooth wheels, valves, filter frames, belting and cocoanut matting.

10. The machines, apparatus, appurtenances and parts mentioned in this list are admitted duty free, according to the Regulations of 15-28th June, 1916, for the duty free admission of dredges and excavators imported for the Siberian and Ural gold mining industries.

United Kingdom

The following officers and persons in Canada and other British countries have been authorized by the British Government to undertake the duty of answering commercial enquiries from abroad:

British Self-Governing Dominions

H. M. Trade Commissioners.

Canada and Newfoundland—Mr. C. Hamilton Wickes, 363 Beaver Hall, Montreal (telegraphic address, "Britcom").

Commonwealth of Australia—Mr. G. T. Milne, Commerce House, Flinders Street, Melbourne (telegraphic address, "Combrit"), and 81 Pitt Street, Sydney (telegraphic address, "Combritto").

New Zealand—Mr. R. W. Dalton, P. O. Box 369, 11 Grey Street, Wellington (telegraphic address, "Advantage").

South Africa—Mr. W. G. Wickham, P. O. Box 1346, Norwich Union Building, St. George's Street, Cape Town (telegraphic address, "Austere").

Imperial Trade Correspondents Appointed by the Board of Trade

CANADA.

Alberta—Mr. J. F. Sweeting, Industrial Section, Natural Resources Department, Canadian Pacific Railway Offices, Calgary.

British Columbia—Mr. P. G. Shallcross, care of Messrs. Shallcross, Macaulay & Co., Ltd., 144 Water Street, Vancouver; Mr. J. J. Shallcross, care of Messrs. Shallcross, Macaulay & Co., Ltd., P. O. Drawer, 730, Victoria.

Manitoba—Mr. W. J. Healy, Free Press Building, Winnipeg.

New Brunswick—Mr. W. E. Anderson, 162 Prince William Street, St. John.

Nova Scotia—Mr. E. A. Saunders, Board of Trade, Halifax.

Ontario—Mr. F. W. Field, P. O. Box 176, Toronto.

Quebec—H. M. Trade Commissioner (see list above), Montreal; Mr. G. B. Ramsey, 55 Dalhousie Street, Quebec.

Newfoundland—Mr. H. W. Le Messurier, C.M.G., Assistant Collector and Deputy Minister of Customs, St. John's.

AUSTRALIA

New South Wales—H. M. Trade Commissioner (see list above).

Queensland—Mr. W. J. Weatherill, *Courier* Buildings, Queen Street, Brisbane.

South Australia—Mr. J. K. Samuel, Brookman's Building, Adelaide.

Tasmania—Mr. A. H. Ashbolt, 23 Old Wharf, Hobart.

Victoria—H. M. Trade Commissioner (see list above).

Western Australia—Mr. A. M. Oliphant, 4 Commercial Union Chambers, St. George's Terrace, Perth.

NEW ZEALAND

Auckland—Mr. A. J. Denniston, Secretary, Chamber of Commerce, P. O. Box 47, Auckland.

Dunedin—Mr. W. T. Monkman, Bond Street, Dunedin.

Wellington—H. M. Trade Commissioner (see list above).

SOUTH AFRICA

Cape Colony—H.M. Trade Commissioner (see list above), Cape Town; Mr. J. S. Neave, Secretary, Chamber of Commerce, Library Buildings, Main Street, Port Elizabeth (and for East London).

Natal—Mr. A. D. C. Agnew, 412 Berea Road, Durban.

Orange Free State—Mr. G. Smetham, P. O. Box 101, Fichardt Chambers, Maitland Street, Bloemfontein.

Rhodesia—Mr. E. C. Baxter, P. O. Box 599, Bulawayo.

Transvaal—Lieut.-Col. C. A. C. Tremeer, D.S.O., P O. Box 839, Johannesburg; Mr. H. R. Eaton,* Commissioner of Customs and Excise, Pretoria.

*Designated to act in an honorary capacity by the Governor-General.

British India

Correspondent appointed by arrangement between the India Office and the Board of Trade—The Director-General of Commercial Intelligence, 1 Council House Street, Calcutta.

British Colonies, Possessions and Protectorates

Correspondents designated to act in an honorary capacity by the Governor of the Colony, Possession or Protectorate in which they reside.

East Indies

British North Borneo—The Commissioner of Customs and Excise, Sandakan.
Ceylon—The Principal Collector of Customs, Colombo.
Federated Malay States—The Commissioner of Trade and Customs, Kuala Lumpur.
Straits Settlements—The Registrar of Imports and Exports, Singapore; the Resident, Labaun.

West Africa

Gambia — The Receiver-General, Customs Department, Bathurst.
Gold Coast—The Comptroller of Customs, Accra.
Nigeria—The Comptroller of Customs, Lagos; the Cantonment Magistrate, Lokoja.
Sierra Leone—The Colonial Secretary, Freetown.

East Africa

British East Africa—The Chief of Customs, Mombasa.
Nyasaland—Mr. J. C. Casson, Superintendent of Native Affairs, Zomba.
Uganda—Mr. H. M. Tarrant, Director of Customs, Entebbe.

South Africa

Basutoland—The Government Secretary, Maseru.
Bechuanaland—Mr. Vernon Eason, Resident Commissioner's Office, Mafeking, South Africa.

West Indies

Antigua—The Treasurer, Antigua.
Bahamas—The Colonial Secretary, Nassau.
Barbados—The Colonial Secretary, Bridgetown.
Dominica—The Treasurer, Dominica.
Granada—The Collector of Customs, Granada.
Jamaica—The Colonial Secretary, Kingston.
Montserrat—The First Treasury Officer, Montserrat.
St. Kitts-Nevis—The Assistant Treasurer, St. Kitts.
St. Lucia—The Treasurer, St. Lucia.
St. Vincent—The Supervisor of Customs, St. Vincent.
Trinidad—The Collector of Customs, Port of Spain.
Virgin Islands—The Commissioner, Virgin Islands.
Bermuda—The Colonial Secretary, Bermuda.
British Guiana—The Comptroller of Customs, Georgetown.
British Honduras—The Colonial Secretary, Belize.
Cyprus—The Chief Collector of Customs and Excise, Larnaca.
Falkland Islands—The Colonial Secretary, Stanley.
Fiji Islands—The Receiver-General, Suva.
Gibraltar—The Colonial Secretary.
Hong-Kong—Mr. E. A. M. Williams, Chamber of Commerce, New Government Building, Hong-Kong.
Malta—The Collector of Customs, Valletta.
Mauritius—The Collector of Customs, Port Louis.
St. Helena—Mr. A. Hands.
Seychelles—The Clerk to the Governor.
Zanzibar—The Chief Secretary to the Government.

NEW COMPANIES.

A further attempt is to be made to utilize the available trap rock deposits around Sault Ste. Marie. The Bruce Mines Trap Rock Company has been incorporated with a capital of $150,000. The head office of the company will be in Sault Ste. Marie.

An old-established stove business is being reorganized in Montreal with a capital stock of $1,500,000. It is understood that more fully extended operations will take place under the new company, which is to be called the Canada Stove and Foundry Co., Limited.

Many enquiries have been made in the last two or three years for collapsible tubes, which are used in practically all businesses producing paste, gum, ink, etc. These demands are apparently about to be satisfied by the Canadian Collapsible Tube Company, Limited, of Toronto, which has just taken out letters of incorporation. The capital is $100,000.

The Duchesney Packing Co., Limited, of Ladner, B.C., have been very successful in canning and drying fruits and vegetables. They have worked on a number of Government contracts, and in order to extend their operations the business is being taken over on a capital basis of $300,000 by a new company which is to be called Canadian Products, Limited.

A well-known man in the feldspar business has succeeded in organizing Feldspars, Limited, capital $200,000, head office Toronto, to exploit the feldspar deposits of Hastings County and other parts of Ontario.

Johnson & Johnson, the well-known manufacturers of surgical and medicinal goods, have taken out a Canadian charter authorizing them to use a capital of $200,000, to be controlled from their head office in Montreal. We have not been able to ascertain whether the Johnson Company will actually manufacture in Canada or not.

The Town of Port Moody, in British Columbia, has been assisting the Port Moody Steel Works, Limited, to get going on a large commercial scale in that town. Out of a total capital of $160,000 Port Moody has guaranteed the bonds to the value of $100,000. The company is now making merchant bars, and it proposes to install larger mills later on after the two open hearth furnaces which are being built are in full operation.

BEET SUGAR IN CANADA.

As the result of special inquiries addressed to the three sugar beet factories of Canada, revised figures of the quantities of refined sugar manufactured from Canadian grown sugar beets during the five years 1911 to 1915 have been returned as follows:—

	lbs.
1911	21,329,689
1912	26,767,287
1913	26,149,216
1914	31,314,763
1915	39,515,802

For 1912 a small part of the total production is estimated. One of the factories did not operate during the year 1915.

THE OFFICE BOY

An office boy, though he may wear knickerbockers, has the same ambitions, the same pride and the same loyalty as is possessed by his elders. A wise recognition of the fact that he is human will increase his value to himself, his associates and his employer without unduly enhancing his egotism.

TRANSPORTATION

By J. E. WALSH

Reduction in Class Rates, Quebec to Winnipeg

Special attention is drawn to a reduction in class rates from Quebec to Winnipeg, which took effect August 26th, 1916. This reduction places Quebec on the same basis as Montreal and points west, and will make the following reduction in the rates:

1	2	3	4	5	6	7	8	10 class
14	12	11	9	7	7	6	6	5

The new rates from Quebec will not apply from points intermediate between Quebec and Montreal, as they are put in in order to meet competition *via* the Canadian Government railways.

Export Rates via Vancouver Again Advanced

Export rates to Vancouver on shipments destined to China, Japan, Philippine Islands, New Zealand and Australia will be very materially advanced, effective October 1st, 1916.

Class rates will be advanced as follows:

On shipments destined China, Japan and Philippine Islands—

1	2	3	4	5
25	15*	25	30	30

On shipments destined New Zealand and Australia—

1	2	3	4	5
*10	5	5	5	10

In regard to the commodity rates, the following examples will give an idea as to the advances proposed:

Automobiles and parts—

When destined China, Japan and Philippine Islands,

Present . . . . . l.c.l. $2.70, c.l. $1.80
Proposed . . . . . l.c.l. $3.50, c.l. $2.25

When destined New Zealand and Australia—

Present ..... l.c.l. $3.50, c.l. $2.20
Proposed ..... l.c.l. $3.60, c.l. $2.40

Bicycles and Parts—

When destined Australia and New Zealand—

Present ..... l.c.l. $2.25
Proposed ..... l.c.l. $2.50

Boots and shoes—

When destined China, Japan and Philippine Islands—

Present ..... l.c.l. $1.65
Proposed ..... l.c.l. $2.15

Export Rates on Iron and Steel Articles Advance 50 Per Cent.

The Canadian railways propose to cancel, effective Oct. 1, 1916, the present iron and steel commodity rates from shipping points in Eastern Canada to Atlantic ports *for export*. This action follows similar action by the American railways in regard to similar rates from Pittsburg, Buffalo, etc.

*Reduction.

All interested members have been advised of the proposed advance. The following few examples will give some idea as to what the advances mean in cents per 100 lbs.:

From	Owen Sound.		Hamilton.		Toronto.		Montreal.	
	Present.	Proposed.	Present.	Proposed.	Present.	Proposed.	Present.	Proposed.
To								
Halifax ...	18.9	27.8	15.7	23.1	....	....	....	....
St. John ...								
W. St. John	17.9	26.8	14.7	22.1	....	....	11	21
Portland ..	17.9	26.8	14.7	22.1	....	....	11	21
Boston ...	17.9	26.8	14.7	22.1	....	....	14.7	21
New York	17.9	26.8	14.7	22.1	15.3	23	14.7	23.3
Philadelphia	17.9	26.8	14.7	22.1	15.3	23	16.2	23.3
Baltimore .	17.9	26.8	14.7	22.1	15.3	23	16.2	23.3
Quebec ...	....	....	13.1	22	15	22	....	....
Montreal ..	16	25	13	20	13	20	....	....

While the shippers at Pittsburg have agreed to the advance proposed from Pittsburg, it might be well to point out that the iron and steel commodity rate, Pittsburg to New York, *for export*, is now 12c. and that on its cancellation, Oct. 1, 1916, the domestic commodity rate (which includes lighterage in New York) of 16.9c. will apply.

The Canadian shipper, however, must pay after Oct 1, 1916, the export class rates which makes the advance in Canada higher than in the United States.

In this connection the following extract from *Manufacturers' News*, Aug. 31, 1916, is quite enlightening as to why the advance was not opposed by the Pittsburg shippers:

Assent to Increase in Export Rates

Eastern iron and steel fabricators are willing that railroads should obtain annually $6,000,000 more from the industry.

Increases in export rates on iron and steel products, from the preferential basis to the same rates prevailing on domestic traffic, and involving extra freight costs of about $6,000,000 annually to the industry, will go into effect on October 1 without a protest from New York and Eastern interests, was the statement by traffic managers of two of the largest exporting companies to the *New York Journal of Commerce*. Protests have been made to the interstate commerce commission by iron and steel exporters in the interior, but without effect.

The increase in export rates amounts, in a rough average, to about 50 per cent., advancing from 11 cents a hundred pounds on crude iron and steel products to 16.9c. from Buffalo and Pittsburg districts. This applies to billets, pig iron and other similar articles, but does not include finished machinery. While no official statements could be obtained as to the cost of the increase to the steel industry, it was estimated in well-informed quarters that the United States Steel Products Company will have to pay out $3,000,000 a year additional, the American Steel Export Company will have to pay out $300,000 extra, and that large increases will be felt also by the Bethlehem Steel Company and other large export concerns. On a basis of increase of 50 per cent., it was estimated that the total new revenue accruing to the railroads will be $6,000,000 annually.

RAILROADS NEED MORE REVENUE.

"The iron and steel interests do not feel inclined to protest against this advance," said F. A. Kelly, traffic manager of the American Steel Export Company. "The steel companies have had sufficient time to cover themselves for the most part on deliveries during the winter, and the unprecedented prosperity of the last year has enabled them to bear the losses on existing contracts without special difficulty.

"The railroads are in need of additional revenue. While they have handled a great volume of traffic in the last few months they have not received higher prices for it. At a time when the iron and steel industry in the United States needed assistance in developing its foreign trade, the carriers aided them by allowing lower rates on export trade than domestic, and we cannot complain at present at the advance. It must be remembered, of course, that competition abroad does not exist just now. The belligerent countries want our products and are willing to pay almost any price to get them. We have no doubt, that when competition is felt again, the roads will be ready to reduce the export rate to assist foreign trade. They will be glad to get export traffic at a much lower charge."

The following supplements to the tariffs shown contain the cancellation notices covering rates from points in Canada:

G.T.R.

Sup. 8 to E. 75 CRC E. 3351
Sup. 38 to E. 56 CRC E. 3089
Sup. 34 to E. 55 CRC E. 3088

C.P.R.

Sup. 10 to E. 2782 CRC E. 3131
Sup. 27 to E. 2581 CRC E 2946
Sup. 25 to E. 2579 CRC E. 2944

While the C.P.R. and G.T.R. references are the only ones we have shown, the other railways have similar tariffs and are taking the same action.

MEN IN CHARGE OF TRANSPORTATION MATTERS

The following extract, taken from the *Traffic World*, August 19, 1916, which originally appeared in the *Houston Chamber of Commerce Traffic Bureau Bulletin*, draws a very interesting comparison between the organization having an expert in charge of transportation matters and the one with "any old kind of a shipping clerk" handling such matters.

The Position of a Traffic Man

As the transportation problem becomes more complex, the industrial interests are beginning to realize that a traffic manager must be a trained expert, and that any old kind of a shipping clerk will not do. Before they pay out large salaries they demand of the recipient the same efficiency and knowledge that they do of a man receiving the same salary in any other department. Merely going to the office in the morning and back at night is not going to make an expert of any traffic man. Merely sitting at a desk and using a telephone is not going to make an expert of him. Merely going to the Traffic Club and eating lunch is not going to make an expert of him. A certain amount of book knowledge is essential. A traffic man is in the midst of the evolution of a new profession. And the men who will reap the benefits of the future are the live ones who realize it now, and not thirty years hence.

Has the anomalous position of the industrial traffic man ever occurred to you? His position is unique. There is no one in the company who can check his work; no one who can give him orders; no one who can supervise his department. He stands in a position of definite, unquestioned responsibility. If he does his work in a sloppy, half-hearted way, there is no one to realize it is done that way. The ex-shipping clerk, the ex-bookkeeper, who is holding a position of traffic manager at a salary of $75 a month and merely seeing that when his factory wants a car it is there, who is afraid of his life, of everyone in the concern drawing more money than he, is dead to his opportunities and never will amount to more than he is. In such organizations a traffic department is dead timber. It is a monkey-wrench in the industrial machinery. It is tolerated simply because it is customary to have a traffic department, just as it is customary to have a watchdog; but no one knows if the watchdog is any good until something is stolen. So the organization never knows that the traffic department is no good until an advance in rates, or a discriminatory rate adjustment puts it out of business.

The executive offices of many shippers do not concern themselves with the traffic department. They regard it as something technical and largely unnecessary. They do not care to be bothered with its monotonous details and hence they are not sufficiently interested to find out the kind of a man that is at the head of it. They do not realize that a favorable rate adjustment may have built up their business and that now they must fight to hold it. They do not realize that other favorable rate adjustments are permitting their competitors to reach markets in which they should sell. They have the old idea that the traffic department is simply for the purpose of getting cars. They do not know that it is the biggest aid the sales department can have. The inefficient traffic man does not see these opportunities. He cannot see them. The up-to-date, energetic, experienced and thoroughly read traffic expert can make a place for himself in any industrial organization, that will be permanent and extremely remunerative.

ELECTRICAL EXHIBITION IN WINNIPEG

Announcement has recently been made that an Electrical Exhibition will be held in the Industrial Bureau at Winnipeg during the week beginning October 9. In this connection Charles H. Webster, Winnipeg's Industrial Commissioner, has issued the following statement, which explains the reason for holding the exhibition and tells of the plans which have been made for its successful conduct.

"Winnipeg is renowned for its cheap electric light and power rates. Nowhere on the continent is electrical energy offered at lower cost,—power from 3c. to ½c. per kilowatt hour according to the amount required, lighting at 3c. per kilowatt hour, electricity for heating, cooking, etc. at 1c. upwards per kilowatt hour. To encourage the use of electricity for manufacturing purposes and for household use, the Winnipeg Industrial Bureau is holding an exhibition for one week, October 9th to 14th, using the large Convention Hall that has a floor space of 92 feet by 176 feet.

"The purchasing for the West is practically all done through Winnipeg. As the exhibition is being extensively advertised, it offers an exceptional opportunity for the manufacturer to introduce his product direct to both dealer and consumer.

"No admission will be charged and as Greater Winnipeg has a population of over 230,000 all within street car communication, an attendance of several thousand daily is assured. The City, The Winnipeg Electric Street Railway Company and the Jovian Order, are co-operating with the Bureau to the fullest extent in promoting the success of the show. Liberal appropriations are being made for decorations, advertising, music and attractions."

It is explained further that space is being offered at 75 cents per square foot and that applications should be in the hands of the secretary not later than September 15.

Reduce Cost and Improve Castings

You can do so with complete certainty by including in your cupola mixture a strong, pure iron that will counteract the impurities that are always present in ordinary pig and scrap.

DESERONTO
CHARCOAL PIG IRON

has the great strength and purity required.

Its use always results in castings of better quality that save a lot of money in machining and finishing and prevent many a valuable casting going to the scrap heap.

One fair try-out will convince you that Deseronto Pig Iron means a saving in cost and a gain in the quality of every casting in which it is included.

Your Inquiry is Invited

MADE IN CANADA BY

Standard Iron Company Limited

DESERONTO - - ONTARIO

R. J. MERCUR & COMPANY, Limited
General Sales Agents
Coristine Bldg. Montreal

TRADE ENQUIRIES

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

532. **Oil Proof Cartons.**—A manufacturer of sweeping compound would like to hear from makers of oil proof cartons.

533. **Berry Box Machines.**—Anyone having at their disposal machines used for the manufacture of berry boxes can communicate advantageously with one of our correspondents.

534. **Potash.**—A correspondent has a considerable quantity of calcined carbonate of potash and potassium sulphate to dispose of if any manufacturers are interested.

EXPORT TRADE ENQUIRIES.

535. **Tobacco.**—A commission agent in Venezuela offers quantities of native tobacco delivered f.o.b. at La Guaira or Caracas.

536. **Machine Tools, Etc.**—A French enquirer is interested in importing machine tools, hand tools, metals, electrical supplies and ball bearings.

537. **Agency.**—A firm in Venezuela is desirous of getting in touch with Canadian manufacturers of a wide range of goods, including food products, cottons, clothing, tools, etc.

538. **Light Dynamos.**—An English firm of mechanical engineers is interested in importing numbers of light dynamos giving 2 to 2½ K.W. at 2,000 r.p.m. and 70 volts.

539. **Agency.**—An English export house which covers Australian territory very fully, is deeply interested in getting in touch with suitable Canadian manufacturers of all sorts of dry goods and dress goods.

540. **Agency.**—An Englishman, at present in Canada but who has had large and thorough acquaintanceship with Russian trade, is anxious to form export connections with manufacturers of farm and construction machinery and cheap automobiles.

541. **Agency.**—One of our correspondents recommends very highly to us a manufacturers' agent in Capetown who is desirous of opening an agency covering sales of timber in South Africa. The class of material required is pine shelving, poplar, basswood and hardwoods.

542. **Agency.**—An engineer claiming long experience in Brazil and offering references, is desirous of representing some Canadian firms in South America.

543. **Agency.**—An agent in Kingston, Jamaica, representing a number of Canadian, American and English houses would like to get into communication with Canadian manufacturers of and dealers in dry goods, provisions and hardware.

544. **Agency.**—An agent in Brisbane, Australia, is seeking sole representation of Canadian manufacturers of paper, resin, lumber and speciality lines.

545. **Provisions, Etc.**—A wholesale and retail house in Calcutta would like to communicate with Canadian manufacturers who would quote prices c.i.f. Calcutta, terms of payment documents against acceptance Calcutta.

546. **Fertilizers and Canned Goods.**—A well-known New Zealand firm would like to get in touch with Canadian manufacturers of the above-mentioned materials.

547. **Corn Dryers.**—We have an enquiry from Jamaica for a small, reasonably priced corn dryer.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

548. **Asbestos Spinning Fibre.**—A Leeds firm of asbestos manufacturers using forty to fifty tons of asbestos fibre per month wishes to hear from Canadian exporters.

549. **Spectacles.**—An English firm of spectacle importers desires to receive samples and prices of spectacles manufactured in Canada.

550. **Dolls, Etc.**—An important firm in St. John's, Nfld., is desirous of being put into communication with Canadian manufacturers of dolls and other toys.

551. **Canned Fruits, Jams, Honey, Confectionery, Etc.**—A London merchant firm is desirous of getting into touch with Canadian manufacturers of canned or bottled fruits, jams, honey, confectionery, canned fish, canned meat and other foodstuffs.

552. **Ploughs and Agricultural Implements.**—A Johannesburg firm of wholesale merchants requests correspondence, catalogues and other details on cheap ploughs, single furrow and other small agricultural implements.

553. **Paints for Outside Iron Work.**—A Johannesburg firm of wholesale merchants is prepared to take up sole agency for outside iron work paints. None but a high-class line wanted. Will purchase outright, but want sole agency for the Transvaal.

554. **Roofing.**—A Transvaal firm asks for samples and quotations on roofing materials, such as asphalt, saturated felt and bitumen. Have handled roofing for years and want Canadian production. Sole agency for Transvaal but will purchase outright. The range must be such that a system of reinforced felt roofing can be used.

555. **Paints and Varnishes.**—A Johannesburg firm requests color cards and prices on Canadian paints and varnishes. A few small samples would be helpful.

556. **Rubber Goods.**—A Newfoundland concern is open to represent Canadian manufacturers of gutta percha and rubber goods in the various makes.

557. **Railway Supplies.**—A Johannesburg firm of engineers in close connection with the South African railway's requirements, are prepared to take up agencies for heavy rails, coaches, steel cars, wheels and all railway supplies, except locomotives.

558. **Steel Cars.**—A Johannesburg firm with engineering department, old connection with the mines, are prepared to take up agency in any mining or electrical machinery or supplies, such as rock drill hose, belting, shovels and picks. At the present moment they are particularly interested in steel mine cars and dump cars. Blue prints and particulars for steel cars may be inspected at the Department of Trade and Commerce, Ottawa.

559. **Feldspar.**—Inquiries as to the possibility of obtaining Canadian feldspar suitable for china makers are made by several United Kingdom users of the material.

560. **Malleable Castings.**—An Aberdeen firm will be glad to enter into correspondence with Canadian concerns prepared to quote for malleable castings cast to pattern.

561. **Potash Feldspar.**—A flint glass manufacturing company in Yorkshire invites offers of supplies from actual Canadian producers of suitable potash feldspar.

562. **Firebricks.**—An old established hardware firm in Barbados is enquiring for Canadian firebricks.

563. **Undistilled Wood Tar.**—A Midlands firm of chemical manufacturers desires the addresses of Canadian manufacturers of undistilled wood tar (preferably from hardwood), which they require in ten to twenty ton lots.

564. **Enamelled Ware.**—A firm in Bristol desires to be put in touch with enamelled ware manufacturers in Canada.

565. **Spools and Bobbins.**—The managing agents of nine jute mills in Calcutta, India, writes to ask if there is any possibility of their being able to obtain their requirements from Canada. They state they will be willing to send samples of the various articles to any firms interested.

566. **Beer.**—Canadian manufacturers of beer containing less than two per cent. alcohol are asked to correspond with a Newfoundland inquirer.

567. **School Requisites.**—A large importing firm in Newfoundland desires to be put in touch with Canadian manufacturers of school writing slates in the standard sizes, ink in two-ounce bottles, and exercise books and scribblers.

FACTORY FOR SALE

Factory building, specially built for wood-working; 20,000 sq. feet floor area; also 3¼ acres of land and railway siding; in Ontario town. For sale cheap. Address INDUSTRIAL CANADA, Box 2, Toronto.

BRYAN PONTIFEX
CHARTERED ACCOUNTANT

Factory Accounting a Speciality

EXCELSIOR LIFE BUILDING
TORONTO STREET
TORONTO

Phone Main 1327

What is "Overhead Burden?"

Unless you know exactly what this term means and unless you can find out the amount of it in your business you will never be a real success.

As for the definition here it is quick: Overhead burden is the money value of the difference between the productive labor hours and the non-productive labor hours you buy—for you buy both.

For instance: A department with 20 men has a pay-roll for the week of 1,000 hours. It's a safe assumption that department did not get 1,000 productive hours—probably a long way from it.

You can get two demonstrations of this. One is a Mechanical Pay-roll Equipment. The other is a Mechanical Cost Keeper that prints in cold type the exact minute each job was started and finished.

E	Elapsed Time	CLOCK RECORD	
	2.2	S 15	9.2
		B 15	7.0
	1.9	S 15	11.1
		B 15	9.2
	.9	S 15	12.0
		B 15	11.1
	3.4	S 15	15.4
		B 15	12.0
	.6	S 15	16.0
		B 15	15.4

This margin of card shows starting and stopping time of each job, in decimals.

If you add up the number of productive hours as shown by your Mechanical Cost Keeper and subtract the total from the 1000 hour total referred to above, you get the non-productive labor you are paying for. Add to this your executive and other usual charges and you get your "Overhead Burden."

As a matter of fact the most vital factor in any business is this difference between Productive and Non-productive Labor. Some firms KNOW what this difference is—they succeed. Others guess or estimate—they fail.

Successful firms use International Time and Cost-Keeping Equipments, and we gladly send you illustrations and price lists on request.



An International "Mechanical Cost Keeper"

The International Time Recording Company of Canada, Limited

Winnipeg:
GEO. MORRIS,
Sales Agent
287 Donald St.

F. E. MUTTON,
General Manager
Anderson and William Sts.
Toronto

Montreal: W. A. WOOD, Jr., Sales Agent
Cartier Bldg., McGill and Notre Dame Sts.

Getting Dear and Scarce

Keen manufacturers recognize that because labor is getting dear and scarce it becomes more than ever important to get every minute of working time they pay for.

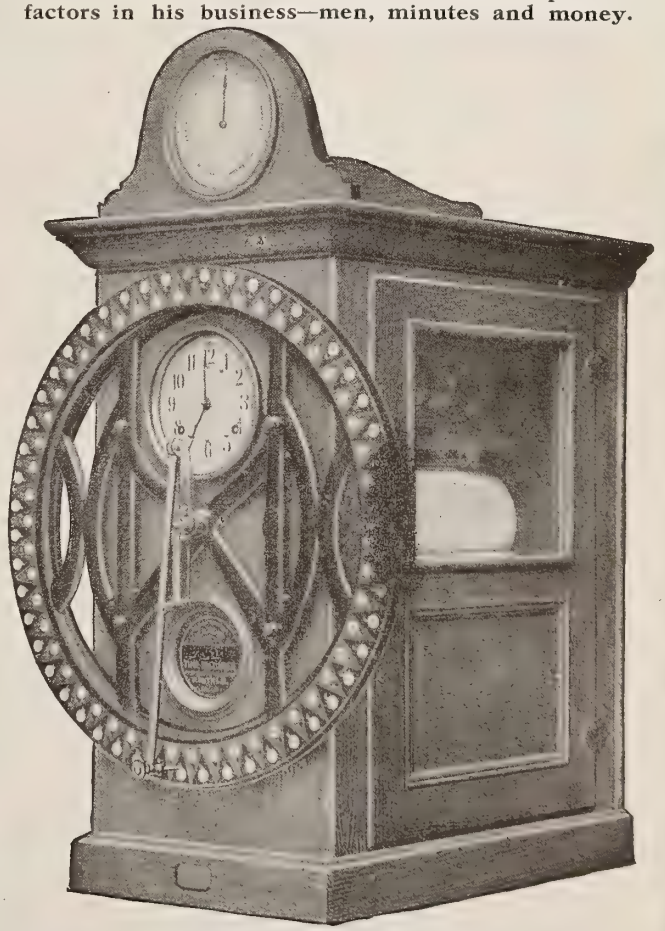
There is only one way to be absolutely sure of this result—with a machine. Flesh and blood can't do it—there are many reasons. Let a machine do it. Whether you use a Dial Recorder or a Card Recorder will depend on the nature of your business, but a number of our biggest customers recently gave us the following list of reasons why they bought

International Dial Time Recorders

and you will be interested in reading them:

1. The operation of the employee recording his time on the International Dial Time Recorder is the fastest in the world.
2. The time slips taken from the Dial Recorder at the end of the pay period give the pay-roll in complete form, already made up, and easily filed.
3. No employee has an opportunity of losing or mislaying the Dial's record, as it is kept under lock and key during the whole pay period.
4. The Dial Recorder can be readily moved about from one part of the building to another.
5. One employee cannot readily see the record of another.
6. The slips from the Dial Recorder can be referred to months back, being easily filed or pasted in a book.
7. The mechanism of the Dial Recorder is inaccessible to those of meddlesome mind.
8. The necessary stationery for the Dial costs less than any other Time Recorder, meaning less up-keep expense.
9. The Dial Recorder is clean and sanitary to use and the printed sheet is not touched by the employees' hands.
10. Dial Clocks have a long life, there being little vibration and jar when used.
11. You can't overload the Dial. It is so quick to use there is no congestion of operatives at registration time.
12. It is impossible to register in the wrong column.
13. The Two-color Automatic Feature, which prints all "lates" and "early leaving" in RED, makes it necessary to check only the red records when making up your pay-roll.
14. The International Dial Time Recorder puts the manufacturer in control of the three most important factors in his business—men, minutes and money.

We can safeguard any business with a scientific time and cost recording equipment. Let us send you full information to-day.



An International Dial Time Recorder

The International Time Recording Company of Canada, Limited

Winnipeg:
GEO. MORRIS,
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287 Donald St.

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Toronto

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Cartier Bldg., McGill and Notre Dame Sts.

WAR LOAN

DOMINION OF CANADA

Issue of $100,000,000 5% Bonds Maturing 1st Oct., 1931

PAYABLE AT PAR AT

OTTAWA, HALIFAX, ST. JOHN, CHARLOTTETOWN, MONTREAL, TORONTO
WINNIPEG, REGINA, CALGARY, VICTORIA

INTEREST PAYABLE HALF-YEARLY, 1st APRIL, 1st OCTOBER

PRINCIPAL AND INTEREST PAYABLE IN GOLD

ISSUE PRICE 97½

A FULL HALF-YEAR'S INTEREST WILL BE PAID ON 1st APRIL, 1917

THE PROCEEDS OF THE LOAN WILL BE USED FOR WAR PURPOSES ONLY

THE MINISTER OF FINANCE offers herewith, on behalf of the Government, the above named Bonds for subscription at 97½, payable as follows:

10 per cent. on application;
30 " " 16th October, 1916;
30 " " 15th November, 1916;
27½ " " 15th December, 1916.

The total allotment of bonds of this issue will be limited to one hundred million dollars exclusive of the amount (if any) paid for by the surrender of bonds as the equivalent of cash under the terms of the War Loan prospectus of 22nd November, 1915.

The instalments may be paid in full on the 16th day of October, 1916, or on any instalment due date thereafter, under discount at the rate of four per cent. per annum. All payments are to be made to a chartered bank for the credit of the Minister of Finance. Failure to pay any instalment when due will render previous payments liable to forfeiture and the allotment to cancellation.

Subscriptions, accompanied by a deposit of ten per cent. of the amount subscribed, must be forwarded through the medium of a chartered bank. Any branch in Canada of any chartered bank will receive subscriptions and issue provisional receipts.

This loan is authorized under Act of the Parliament of Canada, and both principal and interest will be a charge upon the Consolidated Revenue Fund.

Forms of application may be obtained from any branch in Canada of any chartered bank and at the office of any Assistant Receiver General in Canada.

Subscriptions must be for even hundreds of dollars.

In case of partial allotments the surplus deposit will be applied towards payment of the amount due on the October instalment.

Scrip certificates, non-negotiable or payable to bearer in accordance with the choice of the applicant for registered or bearer bonds, will be issued, after allotment, in exchange for the provisional receipts.

When the scrip certificates have been paid in full and payment endorsed thereon by the bank receiving the money, they may be exchanged for bonds, when prepared, with coupons attached, payable to bearer or registered as to principal, or for fully registered bonds, when prepared, without coupons, in accordance with the application.

Delivery of scrip certificates and of bonds will be made through the chartered banks.

The issue will be exempt from taxes—including any income tax—imposed in pursuance of legislation enacted by the Parliament of Canada.

The bonds, with coupons, will be issued in denominations of $100, $500, $1,000. Fully registered bonds without coupons will be issued in denominations of $1,000, $5,000, or any authorized multiple of $5,000.

The bonds will be paid at maturity at par at the office of the Minister of Finance and Receiver General at Ottawa, or at the office of the Assistant Receiver General at Halifax, St. John, Charlottetown, Montreal, Toronto, Winnipeg, Regina, Calgary or Victoria.

The interest on the fully registered bonds will be paid by cheque, which will be remitted by post. Interest on bonds with coupons will be paid on surrender of coupons. Both cheques and coupons will be payable free of exchange at any branch in Canada of any chartered bank.

Subject to the payment of twenty-five cents for each new bond issued, holders of fully registered bonds without coupons will have the right to convert into bonds of the denomination of $1,000 with coupons, and holders of bonds with coupons will have the right to convert into fully registered bonds of authorized denominations without coupons at any time on application to the Minister of Finance.

The books of the loan will be kept at the Department of Finance, Ottawa.

Application will be made in due course for the listing of the issue on the Montreal and Toronto Stock Exchanges.

Recognized bond and stock brokers will be allowed a commission of one-quarter of one per cent. on allotments made in respect of applications bearing their stamp, provided, however, that no commission will be allowed in respect of the amount of any allotment paid for by the surrender of bonds issued under the War Loan prospectus of 22nd November, 1915. No commission will be allowed in respect of applications on forms which have not been printed by the King's Printer.

Subscription Lists will close on or before 23rd September, 1916

Department of Finance, Ottawa, September 12th, 1916

Honour Rolls and Illuminated Addresses

also

ENGRAVING FOR GENERAL ADVERTISING PURPOSES

HALF TONES
ZINC, WOOD,
ELECTROTYPING

J. L. JONES ENGRAVING CO. LIMITED
133 RICHMOND STREET WEST
TORONTO
CANADA

"Metallic" Building Materials

Smarten Up Your Office, Warehouse or Factory



Have it done quickly, easily, economically with "M.R.Co." Ceiling and Wall Plates. They make a handsome, fire retardant and well-nigh everlasting covering.

Many handsome patterns.

For folders, etc., address

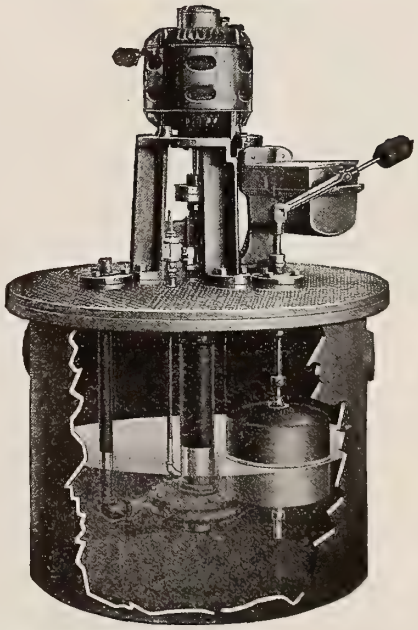
The Metallic Roofing Company, Limited
MANUFACTURERS
Toronto Winnipeg



IT DOESN'T PAY

To be handicapped by unreliable

PUMPS



We can supply the best on the market. TRY US.

The Smart-Turner Machine Co., Limited.

HAMILTON - - - CANADA

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Medicine Hat.

The erection of the new mill and elevators for the Lake of the Woods Milling Company is progressing rapidly. The brickwork has already reached the third floor and work has just commenced on the new grain tanks. The completion of the mill is expected about the beginning or middle of December.

BRITISH COLUMBIA.

Eburne.

The Pacific Steel Products Company are installing a fine plant, including a steel rolling mill, which has just recently been got under way. The plant is still in course of construction, but already fifty men are employed. Electric power is used exclusively, being supplied by the B.C.E.R. Co. from their Steveston line.

New Westminster.

John R. Duncan, of the Vulcan Iron Works, proposes to establish a steel shipbuilding plant and repair yard here. The plans call for an investment of $150,000 at once, and about $200,000 more when the drydock is built.

The Marsh Hutton Powers Company, Western Trust Block, propose to build a shingle mill on Lulu Island, and have leased a site from the city. Work may start very shortly. The approximate cost is $30,000.

Henry Schaake of this city is considering the erection of a foundry to cost about $50,000. Construction will start shortly if a site can be procured.

Swanson Bay.

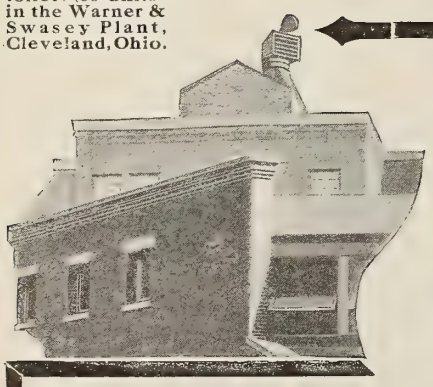
The whole of the assets and undertakings of the Swanson Bay Forests, Wood Pulp and Lumber Mills, Limited, at Swanson Bay, have been taken over by the Empire Pulp and Paper Co., Limited, which has been granted a charter, with headquarters in Vancouver, and a capital stock of $2,500,000. It is understood that the sulphite mill at Swanson Bay, which has been idle for some years, will again be put in operation. The mill has a capacity of twenty-five tons a day and is equipped with two digesters and a one hundred inch drying machine.

NEW BRUNSWICK.

Bathurst.

Contract has been awarded for the erection of a smelting plant for the Bathurst Lumber Company. About 400,000 brick will be required.

Showing 48-inch Ormsby-Swartwout Ventilator, ventilating 6 stories of factory toilets (58 units) in the Warner & Swasey Plant, Cleveland, Ohio.



THIS VENTILATOR
SOLD 20 MORE

SIX years ago a single Ormsby-Swartwout Ventilator was installed on this plant. Since then they have installed twenty more ventilators as a result of the "pulling power" of their first Ormsby-Swartwout.

In the Ormsby-Swartwout Ventilator, "pulling power" is an actual fact. It puts the free power of the wind to work, creating a vacuum before the mouth of the ventilator, which is continually filled by the used air below. Temperature conditions do not affect it—the Ormsby-Swartwout maintains a steady flow of air even on the hottest days. Ventilation and ventilation problems are fully treated in our 24-page handbook ***"The Gospel of Fresh Air."*** It takes up such subjects as fresh air and labor output, ventilation and workers' errors, the semi-mechanical principle, exact specifications, list of users, etc. It's free to you on request. Give name of company and writer.

Ormsby-Swartwout
Rotary Ball-Bearing
VENTILATORS



Ormsby-Swartwout Rotary Ball-Bearing Ventilator

A. B. ORMSBY CO., Limited
TORONTO

Associated with the Metal Shingle & Siding Co., Ltd., Preston, Montreal, Winnipeg

TANKS

FOR PULP AND PAPER MILLS, CHEMICAL WORKS, OIL REFINERIES, ETC.

STEEL STRUCTURES

TO SUPPORT TANKS

WRITE FOR QUOTATIONS

MacKINNON, HOLMES & COMPANY, LIMITED

SHERBROOKE, QUEBEC

JULIUS COHEN & JOSEPHY

Foreign Domestic **WOOL** *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO

Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative **13 Church St., Toronto**

T H-E

Better Light--Better Work

Don't be "penny wise and pound foolish" about light in your plant. Be really economical and have lots of it. Be long-headed as well and use Hydro current and Hydro lamps. Then you are getting the utmost possible for your money because of Hydro's basic principle, "The best service---at cost."

Our Engineers gladly report on your lighting system, and how it can be improved, without any cost to you. Why not use them?

We are at the other end of your telephone wire.

Toronto Hydro-Electric System

226 Yonge St. Phone Adel. 2120

Mill Creek.

The new brick-making plant installed at the old brick yard, by the Maritime Automobile Company, is now in operation. The capacity of the plant is 25,000 brick per day, when working up to full capacity, and the company plans to manufacture a million brick each season. They also purpose to install a plant for pressed brick and drain tile at a later date.

Millerton.

It is understood that English capitalists, under Sir Robert Perks, have taken over the plant of the New Brunswick Pulp and Paper Co., at Millerton, N.B., and will rebuild on a larger scale.

St. John.

The new plant which was under construction for McAvity & Sons was completed recently. The machine shop was completed nine weeks from the date on which the contract was received, and the boiler house, which was increased in size after the building was under way, was completed two weeks later. The majority of the machinery is now installed in the buildings and running temporarily with power obtained from the street railway company. A small generating plant is, however, being installed for the McAvity Company.

NOVA SCOTIA.

Dartmouth.

Involving an expenditure of $2,000,000, work is now going forward on the Imperial Oil Company's premises on the Dartmouth shore of Halifax Harbor, just below Woodside. The plant to be erected there will be a refinery with storage capacity also, and will be the largest and most modern plant of its kind this side of Sarnia, Ont., where the largest in Canada has been erected.

ONTARIO.

Brantford.

Contract for the $65,000 plant of the Dominion Steel Products Company has been let and work will be completed in sixty days. The company has a big shell order and will install the latest machinery. About 400 men will be employed in this factory. The city council have passed a by-law granting them a fixed assessment of $10,000.

The Hample Paper Box Company are erecting a $12,000 box factory at Brantford.

Campbellford.

Good progress is being made on the new buildings of the Northumberland Paper and Electric Company. The structures are being built of stone.

Chatham.

The directors of the Gray-Dort Motor Company have decided to extend their plant here.

The Dominion Sugar Company have commenced work on the large dock which is to be built on the river near the factory site. Already a large number of spiles have been placed in position and the work is proceeding satisfactorily.

Contract has been let for the addition to the factory of the American Pad & Textile Company. Estimated cost, $50,000.

Collingwood.

The plant of the Collingwood Packing Company was recently destroyed by fire. The loss is estimated at about $100,000.



A Modern Industrial Plant Built Fireproof Trus-Con System Daylighted with Trus-Con Steel Sash

E. A. Wallberg, Contractor. Dominion Tire Co. Building, Kitchener, Ont. Albert Kahn, Architect. Ernest Wilby, Associate.

TRUSSED CONCRETE STEEL CO. OF CANADA, LIMITED

Head Office and Works - - Walkerville, Ont.

BRANCHES:

Montreal Toronto Winnipeg

TRUS-CON SYSTEM Building Products

THE NICHOLS CHEMICAL COMPANY, LIMITED

MANUFACTURING CHEMISTS

HEAD OFFICE: 222 ST. JAMES STREET, MONTREAL

Branch Office—120 Mill Street, Toronto

WORKS: Capelton, Que., Sulphide, Ont., Barnet, B.C. WAREHOUSES: Montreal, Toronto

Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
Muriatic Acid	Sulphide Soda	Blue Vitriol	Tri-Sodium Phosphate
Nitric Acid	Hypo-Sulphite Soda	Sulphate Alumina	Ammonia
Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
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Agents for Baker & Adamson's Chemically Pure Acids and Chemicals

AGENTS FOR CANADIAN SALT CO.—"WINDSOR" BRAND CAUSTIC SODA & BLEACHING POWDER



$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

J. R. BAXTER & CO., LTD. Montreal
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COWAN HARDWARE CO. London
WALKERVILLE HDW. CO. Walkerville
NORTHERN CAN. SUP. CO. Cobalt

Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.

NEW TORONTO, ONT. CANADA

Polarine

65% of the depreciation of the average car is preventable by the use of a good lubricant.

Polarine prevents *preventable* wear and tear. It lubricates efficiently under all conditions and deposits a minimum of carbon.

THE IMPERIAL OIL COMPANY
Limited

BRANCHES IN ALL CITIES

T. 212



"We've got to save our concrete floors"

"Our cement floors are comparatively new and are the best we could lay down, but the surface is already sanding, water is getting spilled on them and they are soaking up oil. I tell you, gentlemen, we have got to save them."

R.I.W. CEMENT FILLER & CEMENT FLOOR PAINT

REMEMBER IT'S WATERPROOF — R.I.W. — REG. U.S. PAT. OFF. — PATENTED AS TO PORTLAND CEMENT FEB. 27, 1906

will keep cement floors wearproof, waterproof and oilproof.

Scuffed off dust won't float in the air to ruin merchandise, get into bearings and cause electric motors to spark.

Oil won't get in, never to be gotten rid of, to injure the concrete.

R. I. W. Cement Filler and Cement Floor Paint fill up the sandy, porous surface and prevent all wear on the floor itself.

Twelve standard shades.

Let us mail you a special booklet. Address Dept. 55.

Manufactured in Canada by

R.I.W. DAMP-RESISTING PAINT CO.
TOCH BROTHERS

Gerrard St. and Carlaw Ave.
TORONTO, ONTARIO, CANADA

Deseronto.

The Dominion Hardwoods, Limited, propose to build a concrete and steel factory, at an estimated cost of $150,000.

Espanola.

The Spanish River Pulp and Paper Company is increasing its capacity by adding four new grinders capable of taking 30-inch wood. It is also putting in two more Robb boilers of 275 horse power each. The company has erected a new building for the boilers, and also a new building for four drum barkers to replace the present disc barkers.

Guelph.

The Partridge Rubber Co. of Montreal have purchased the plant and business of the Standard Tire & Rubber Co. of Guelph at a price said to be in the neighborhood of $150,000. The new owners expect to give employment to 150 hands at the outset and the expectation is that this number will soon be exceeded. All the contracts of the Standard Co. have been taken over.

Hamilton.

The general carpentry, masonry and steel contracts for the erection of an addition to the premises of the Union Drawn Steel Company, Victoria Avenue, have been awarded. The approximate cost is $5,000.

Plans have been prepared for an addition to the premises of the Bell Thread Company to cost $5,000.

There is a possibility that the Ford-Smith Automobile Truck Manufacturers will erect a plant in this city.

A brick addition to the factory of the Chipman & Holton Knitting Co., to cost about $15,000, is to be erected.

The Canada Cotton Company, James Street North, have had plans prepared for an extension to their factory to cost $6,000.

Plans are being prepared for an addition to the premises of the Acme Stamping and Tool Company, Sydney Street.

Plans have been prepared for alterations to the premises of the Appleford Counter Check Book Co., estimated to cost $7,500.

Iroquois Falls.

The Abitibi Power and Paper Company, Limited, have awarded contracts for two new news print machines, each 232 inches wide, to Charles Walsley & Company, Limited, Bury, England, which they expect to have installed at Iroquois Falls, Ontario, by the end of next year. They will bring the news production of the plant up to over four hundred tons a day. The company are also increasing their power plant and developing new power at Twin Falls, to the extent of 25,000 horse-power. Ground wood production will be increased to 350 tons per day and the capacity of the sulphite plant to 125 tons.

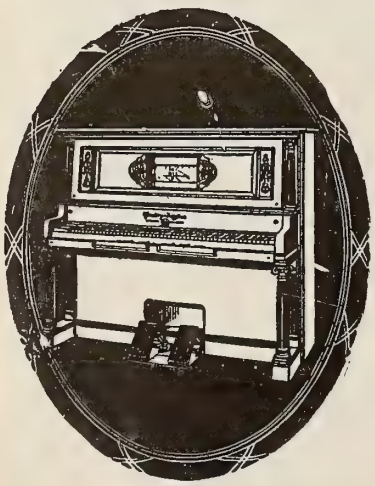
Kitchener.

T. H. Rieder, President of the Canadian Consolidated Felt Company, Limited, announced on August 21st that contracts had been let for a large permanent addition to the buildings of the Kimmel felt factory on Margaret Avenue, increasing the present floor space by nearly one acre.

Evidences are forthcoming from the manufacturers that they are alive to the recent change in the name of this city. One instance of this is the change of name of the Berlin Trunk & Bag Co., Limited. As there are a large number of

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,
188 Yonge St., Toronto



Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

By the Toronto Furniture Co., *Limited*

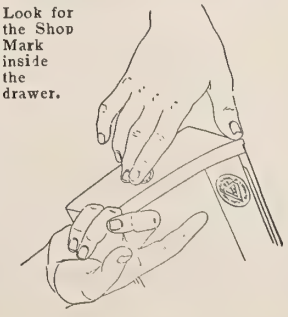
"MANY A THING DIVINELY DONE BY CHIPPENDALE AND SHERATON."—Andrew Lang.

OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

STRUCTURAL DETAILS

Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.

Look for the Shop Mark inside the drawer.



TORONTO FURNITURE CO., LIMITED

Show Rooms and Cabinet Shops: 163-187 Dufferin Street, Toronto, Canada

firms operating in Kitchener with the name "Berlin" appearing in the company designation, more changes of this character may be expected.

London.

London Rolling Mills Company plans erecting a reinforced concrete addition, to cost $50,000; also intends installing new machinery.

George White & Sons Co., Limited, Cabell Avenue, propose to build a factory addition on Adelaide Street, and are preparing plans. The estimated cost is $15,000.

The Middlesex Mills, Limited, incorporated by Dominion charter with an authorized capital of $250,000, will manufacture cotton, linen, silk, woollen and other goods in a large factory building purchased in the industrial area of London. The building was until recently occupied by the Dominion Office and Store Fitting Company and has over 25,000 square feet of floor space in the main building and stands on two and one-half acres on Dundas Street East. The firm are at present manufacturing from cotton almost entirely and have turned out samples of cotton towelling and striped dress fabric, etc., which are said by dealers to equal the best manufactured products in these lines, and their future seems to be exceptionally bright. The company have had no difficulty in securing all the help they need. These are mostly women to whom good wages are paid. The machinery is now being installed for weaving. The company will make everything connected with the manufacture of their product except the spinning of yarn. They have their own dye plant and will make their own chemicals for bleaching purposes.

Merritton.

Plans have been prepared for the erection of a $200,000 addition to the Lincoln Paper Mills at Merritton. The addition will consist of a sulphite plant.

Mille Roches.

It is understood that the Provincial Paper Mills Co., Limited, of Toronto, with plants at Mille Roches, Thorold and Georgetown, Ontario, is contemplating building a new mill here.

New Toronto.

A by-law has been passed granting fixed assessments to the DuPont Fabrikoid Company, 864 Dufferin Street, contingent upon the erection of a factory at an approximate cost of $150,000.

Niagara Falls.

Contract for the erection of a foundry, of brick and steel construction, for the Pollard Mfg. Company, has been awarded. Estimated cost is $40,000.

The Perfection Tire & Motor Co., Limited, manufacturers of automobile tires and mechanical rubbber goods, will erect a factory in this city, providing the ratepayers ratify a by-law which will be presented to them this month. The by-law provides that the city furnish the company with power at $10 a horse-power for a period of ten years, also give the company a fixed assessment for this time. One hundred hands will be employed at the outset of operations.

BEVERIDGE PAPER CO., LTD.

Paper Mill Agents——Merchants——Mill Supplies

The mills we represent can supply promptly all qualities Wrappings, including Waterproof Papers which the Department of Trade and Commerce urges exporters to use, and our twine reinforced "Tufenuf" replaces Burlap. Also genuine Parchments, Glassines, and Blottings.

Steam Plants: PROTECTO and PROTECTOCOAT will cut your fuel bill 25 to 50%, and not pollute steam. Let us quote you on your paper wants, and send you our Boiler Preservative Booklet—it will pay!

DELANY & PETTIT, LIMITED

Joint and Veneer Glue

Always uniform.

OFFICE:
133 Jefferson Avenue,
TORONTO, ONT.



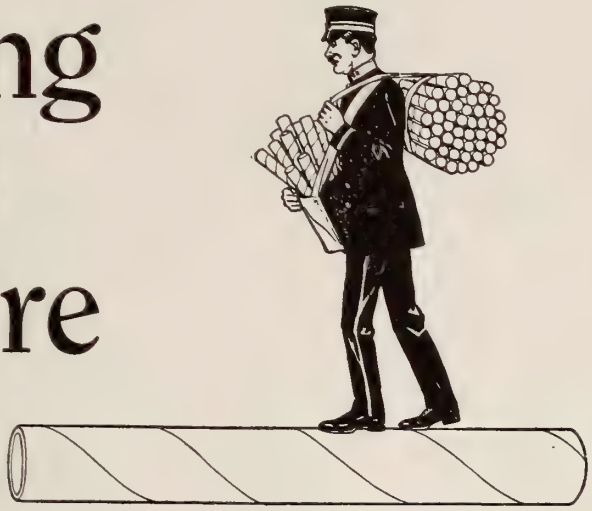
Special Woodworking

Garnet Paper and Cloth

WORKS:
105-131 Jefferson Avenue
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FOR

Strong and Secure Mailing Tubes



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Rudd Paper Box Company, Limited

372-376 Richmond St. West

Toronto, Canada

ALWAYS USE

Hammer Brand Plaster of Paris

Manufactured for Half a Century—the Standard of Excellence

Try it and Compare
Its Surface Covering Capacity
With Other Brands

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ALBERT MANUFACTURING CO.

Hillsborough, New Brunswick, Canada

EXPORT AGENTS: THE IMPERIAL EXPORT CO., LIMITED

MELBOURNE	SYDNEY	AUCKLAND	CHRISTCHURCH
17 Queen St.	Martin's Chambers, Moore St.	34 Fort Street	———St.



Ever Shaved by a Blunt Razor?

Remember how long it took ; how you scraped away and were finally disgusted with the shave ?

Well, that is how a workman feels when using a file that has reached its "inefficient point." He gets irritated — does not take the same pleasure in his work. The foreman thinks he is slow. There is no satisfaction anywhere.

But, give that man a new file and he puts new enthusiasm and new energy into the job.

This is a homely illustration, but it is true, for it is human nature.

The line of least resistance and greatest efficiency in shop practice to-day is to give men new files to work with when their files reach the "inefficient point."

Manufacturers, suggest to your superintendents,

Superintendents, instruct your foremen,

Foremen, tell your men

to turn in old files the moment they reach their "inefficient point." It costs less for a new file than it does to have a man slowed down and irritated by an old file.

Nicholson File Company

Port Hope - Ontario

DEALERS EVERYWHERE

North Bay.

The city of North Bay has decided to submit a by-law to the ratepayers on September 18th to guarantee the bonds of the North Bay Hat Manufacturing Co. to the extent of $15,000, giving also a free site, exemption of taxes for ten years, and water at railway rates.

Orangeville.

The Canadian Clock Company propose to build a factory estimated to cost $30,000, and a by-law will be submitted to authorize a loan of $15,000 to the company.

Ottawa.

The National Manufacturing will build an extension to their factory to cost about $4,000.

Edmonson & Petch, Bank Street and Second Avenue, have let the general contract for the erection of a brick factory to cost $6,000.

The International Land and Lumber Co., whose headquarters are at Ottawa, intend erecting a 100-ton pulp mill on the Ashuapmauch River in the Lake St. John district. The company own several hundred miles of limits on the east shore of the lake. Among those back of the project are J. L. Bate, R. N. Bate and Thomas Askwith, of Ottawa.

Pembroke.

The Pembroke Woollen Mills Company, Limited, are about to rebuild their premises, probably by day labor.



Let us systematize your handling problem.

Canadian Mathews Gravity Carrier Co., Ltd.

484 Richmond St. W., Toronto Patented



Cut A

"Steel Grip" Painters' Brushes

To properly and evenly spread paint or varnish it is necessary to have a Brush constructed so that the Bristles converge to the centre, as shown in cut A. This produces an elastic and resilient action — a feature demanded by the best practical painters, who know from long experience the advantage of using this type of Brush.

This result can only be obtained in the swell or oval-faced compressed "STEEL GRIP" ferrule construction (Patented 1910), which entirely overcomes the spreading of Bristles which is more or less found in Brushes made with a straight or flat-sided ferrule (see cut B), and also is often exaggerated by manufacturers to give the Brush the appearance of size with a less amount of Bristles. Besides, by compressing the ferrules, the Bristles are so firmly gripped that it is impossible for them to come out.

"STEEL GRIP" Brushes are most economical to use, as on account of their high quality and general efficiency they give long and satisfactory wear.

Write for Description and Prices, Etc.

MANUFACTURED BY

The Boeckh Bros. Company, Ltd.

TORONTO : ONTARIO



Cut B

Fire Protection—And Insurance



WILL NOT BECOME WATERSOAKED

Made of Fibreware, Moulded and Hardened under enormous hydraulic pressure and Baked at extreme heat.

The Finished Article gives almost everlasting wear.

WE do not advise You to under-insure your property, but we say that if Eddy's Round-Bottomed Fire Pails are part of your Fire-fighting equipment you will likely get a lower rate than you otherwise would have done.

EDDY'S Fibreware Fire Pails are made with a specially constructed Rounded Bottom so that they must be stood or hung in Racks where everybody in the Factory or Mill knows where to find them when necessary.

THE E. B. EDDY COMPANY, LIMITED

TORONTO BRANCH : HULL - CANADA 73-75 WELLINGTON

Point Edward.

Representatives of the Grand Trunk Railway, and also members of a New York paint concern, have decided to erect a paint manufacturing plant here.

Preston.

The erection of a factory for the manufacture of porcelain is being considered by a firm in which Mayor Hurlbut is interested. Estimated cost is $25,000.

Renfrew.

International Molybdenum Company, J. L. Murray, President, contemplates equipping an electrically operated refining plant to cost $150,000.

Tenders will shortly be called for the erection of an addition to the premises of the Renfrew Textile Company, Limited. The addition will be of brick construction and will cost $10,000.

Smooth Rocks.

The Mattagami Pulp and Paper Company of Smooth Rocks, Northern Ontario, has changed hands and is now owned by the Armstrongs of the New York and Pennsylvania Company. The new owners have bought out the interests of those who were engaged in the construction of the mill and will carry on the work in future. It is stated that the mill will be completed and in operation early in 1917. The Mattagami Company's officials have been succeeded by men selected by the new owners.

Stratford.

The Mooney Biscuit and Candy Company of Stratford, Ontario, has made an assignment in favor of its creditors. The company was organized in 1902 by Mr. W. J. Mooney and had a rapid growth. In addition to the large plant in Stratford, factories were subsequently acquired in Montreal, Winnipeg and Vancouver, the head office having been recently moved to Montreal.

Thorold.

The general contract for the erection of the sulphite pulp mill to be erected by the Ontario Paper Co., at Thorold, Ont., as well as the contract for an addition to the machine room of the company, has now been let and construction has begun.

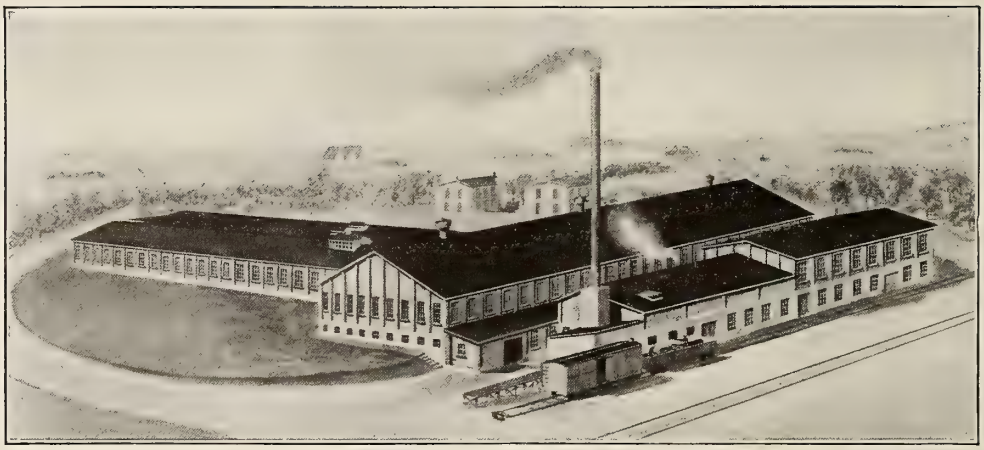
Toronto.

Plans of abbatoir buildings to be erected for the William Davies Company, Limited, 521 Front Street East, have been prepared by Henschien & McLaren, 431 Dearborn Street, Chicago, Ill., and tenders will be called shortly. Approximate cost $200,000.

Plans of a factory and warehouse, of brick and mill construction, are being prepared for Willards Chocolates, Limited, 260 Spadina Avenue.

The Mounce Company, Limited, 334 Parliament Street, have started work on additions to their premises, estimated to cost $5,000.

Work has been started on the erection of a factory on King Street West for Adams Brothers Harness Mfg. Company, Limited, 204 King Street West.



Coating Mill, Barber Division, Georgetown, Ont.

The Largest and Best Equipped Mill in Canada for the Coating of Paper.

"Maple Leaf" "Beaver" "C.A." Coated

Insist on these Brands being used in your Catalogue

PROVINCIAL PAPER MILLS CO., Limited

Toronto Office: Telephone Building. Private Exchange Adelaide 1986

H. & D. Corrugated and Solid Fibre Board



CONTAINERS will save on your transportation charges, save your floor space, cut down packing expenses, and give you positive protection against loss from damage and pilfering. Write for prices and samples.

The Hinde & Dauch Paper Co. of Canada, Limited, Toronto, Canada

The Montreal Lithographing Company, Limited

High Class Lithographers and Designers of

CALENDARS SHOW CARDS
LABELS OFFICE STATIONERY
ADVERTISING PLAYING CARDS

Office and Works
ONTARIO STREET & PAPINEAU AVENUE
MONTREAL, CANADA

Shurly & Derrett, Limited
TORONTO

TRADE MARK.

Manufacturers of

TWINES
COTTON AND JUTE ROPE
MILL & SPINDLE BANDING, etc., etc.

Made in Canada

Canadian Manufacturers using the best kind of Stationery specify

Rolland's Papers

Ask your Printer to show you our selection of Bond, Writing and Ledger Papers. There is a line for every use, each one being the best in its class.

WE RECOMMEND

Superfine Linen Record

for your correspondence stationery.

SAMPLES ON REQUEST

The Rolland Paper Co., Limited

HIGH-GRADE PAPER MAKERS

General Offices: 142 St. Paul St. West Montreal, P.Q.

Mills at St. Jerome and Mont Rolland, P.Q.

The general contract for the erection of a factory for William Wrigley, Jr., Company, Limited, Carlaw, Avenue, has beet let. Tenders on heating, plumbing, electrical work, sprinkler system and elevators will shortly be called by the architects, Prack & Perrine, 808 Lumsden Building. The estimated cost is $250,000.

The city architect has granted a building permit to Northop & Lyman Company, Richmond Street West, to erect a four-storey brick factory and warehouse at 66 Wellington Street West, at a cost of $59,000.

The Dunlop Tire and Rubber Goods Company, 244 Booth Avenue, contemplates the erection of a factory building.

An addition to the premises of the Sovereign Perfumes, Limited, 146 Brock Avenue, has been started.

The general contract for the erection of the premises of the Corrugated Paper Company, Limited, 187 Geary Avenue, has been awarded. The estimated cost is $12,000.

The city architect granted a permit to the T. Eaton Company to build a one-storey brick embroidery factory on Bloor Street, near Dufferin, at a cost of $12,000.

The Canadian Bag Company has received a permit to erect a two-storey brick factory, to cost $40,000, on the north side of Paton Road.

Walkerton.

The Canada Spool and Bobbin Company have let the general contract for the erection of a dry kiln of cement block construction. Plans are also being prepared for a storage building, the total cost of which, with the dry kiln, is estimated at $7,500.

Riordon Pulp & Paper Company, Limited

Montreal

SULPHITE FIBRE WOOD PULP FOR PAPER MILLS

CAPACITY 60,000 TONS PER YEAR

HAWKESBURY "IMPERVIOUS SPRUCE" SHEATHING in 36 and 72 INCH ROLLS

SPRUCE LUMBER, CLAPBOARDS CEDAR SHINGLES, RAILWAY TIES, FENCE POSTS

Pulp Mills: Hawkesbury and Merritton

Saw Mills: Calumet, L'Annonciation, Boule, Quennouille, P.Q.

WE DO NOT MAKE PAPER

BROWN BROS., LIMITED



Manufacturers of

ACCOUNT BOOKS

Loose Leaf Ledgers, Binders, etc.
Leather Goods, Diaries, Paper, Stationery, Office Supplies

OFFICE AND FACTORY : : TORONTO
SIMCOE, PEARL AND ADELAIDE STS.

In Black & White
We Say That
The KRYPTON LINES
Are the Finest-
Writing Papers
Produced in Canada
HOWARD SMITH PAPER MILLS
LIMITED.
BEAUHARNOIS, P.Q.

CANADIAN
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MARK
BLEACHED SULPHITE
Manufactured and Sold by
The Edward Partington Pulp and Paper Co.
ST. JOHN, N.B., CANADA
EUROPEAN AGENTS:
KELLNER PARTINGTON PULP AND PAPER CO.
MANCHESTER, ENGLAND

Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Waterloo.

The well-known shoe manufacturing firm of Valentine and Martin has been organized into a "limited" company bearing the same name. The capital stock of the company is $200,000, and it will take over the partnership business previously carried on.

Wiarton.

It is understood that Feldspar and Clay Products, Limited, recently incorporated with a capital of $1,500,000, have purchased the plant and property owned by the Crown Portland Cement Company at Wiarton, Ont. It is the intention of the new firm to engage in the manufacture of potash. They will get their raw material near Parry Sound, where they have purchased 500 acres containing feldspar.

QUEBEC.

Bagotville.

The recently formed Ha Ha Bay Sulphite Company, which has completed plans for building a sulphite mill here, is seriously considering the advisability of building a paper mill in conjunction with the new pulp plant.

Chicoutimi.

It is stated that Price Bros. & Company, Limited, propose to make considerable enlargements to their plant. This will include the erection of a new unit to be added to the news print mill, and additions to other plants which will increase the company's production of sulphite and ground wood pulp. The new paper unit will probably be in operation by February 1st, 1917, while it is expected that the other additions will be completed by October of the current year.

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Adelaide, Melbourne and Sydney (Australia), and Auckland, Wellington, Lyttelton and Dunedin (New Zealand). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

The New Zealand Shipping Co.

LIMITED

213 Board of Trade Building, Montreal

EXPORTERS OF

Reed Organs, Piano Stools, Music Cabinets.

Catalogue B.

The Goderich Organ Co. Limited

GODERICH, CANADA

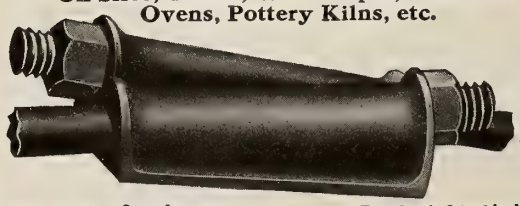
Closet Seats, Flush Tanks, Medicine Cabinets,

Everything for the Bath Room.

Write for Catalogue C. and Price List.

LUGS FOR BANDS

On Silos, Tanks, Water Pipes, Penstocks Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods ⅝ to 1½ inch — Flat Bands 2 to 6 inches wide

Best Malleable Iron—Prompt Shipments.

OTTERVILLE MFG. CO., LIMITED

OTTERVILLE, ONT.



September Golf *at* St. Andrews by-the-Sea, N.B.

The most delightful month in the year in which to golf is September. The most sporting course on which to golf is at St. Andrews. This is available for guests at the

ALGONQUIN HOTEL

which will remain open until September 30th. Early autumn tints enhance the enjoyment of a course which is now in perfect condition. John Peacock, the well-known professional, is always in attendance.

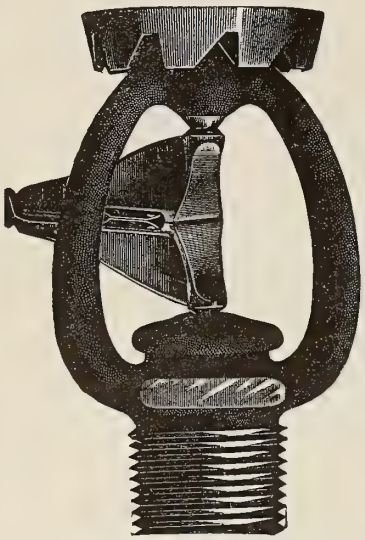
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Write:

H. G. VOGEL CO. CANADA LIMITED

169 Duke St., MONTREAL, P.Q.

Drummondville.

Fire has destroyed the blending house of the Aetna Chemical Company. The loss is estimated at $20,000.

Granby.

The Granby Elastic Webb Co. have had plans prepared for a new factory of brick construction.

Montreal.

Contract has been awarded for an extension to the St. Jerome, Que., plant of the Canadian Consolidated Rubber Company, Limited, Montreal.

The general contract for the erection of an addition to the premises of the Canada Malting Company, 512 St. Ambroise Street, has been let at an approximate cost of $6,000.

Contract for the erection of an addition to the premises of the Dominion Textile Company has been let. The approximate cost is $15,000.

Quebec.

An addition to the premises of the St. Lawrence Paper Bag Co., at 103 Marguerite Street, Quebec, is under contemplation, and private tenders have been received for the work, which it is estimated will cost in the neighborhood of $20,000.

The International Paper Co., of New York, has decided to build a 200-ton news print mill in Canada, with a ground wood and sulphite pulp plant attached. It is expected that the mill will be erected at Three Rivers, Que.

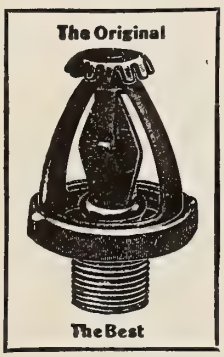
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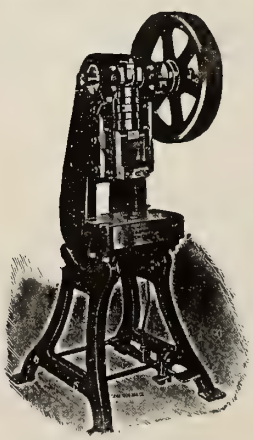
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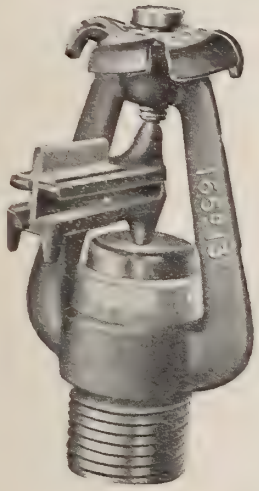
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Let us install them in your building and you will lose your fear of loss from fire.

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also wood and steel tanks for Municipal, Railway and Suburban water supply.

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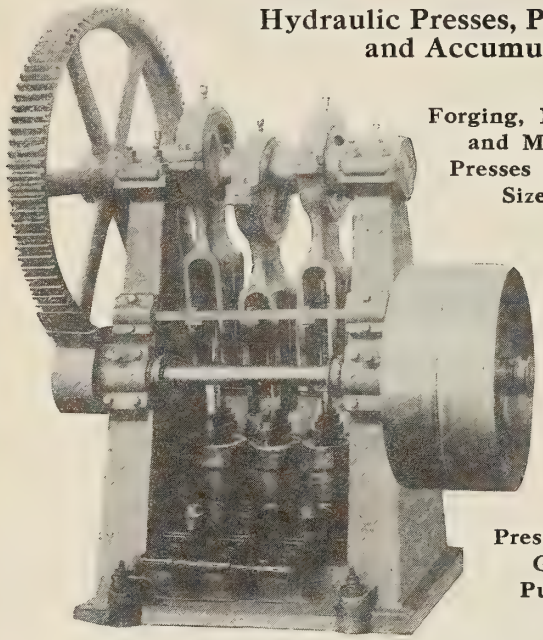
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Forging, Nosing and Marking Presses for all Size Shells

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WILLIAM R. PERRIN, Limited
Toronto, Canada

Windsor Mills.

The contract for the erection of a plant for the Canada Paper Co., Limited, has been awarded. This will be of brick and reinforced concrete and will cost approximately $30,000. This work was previously reported as being at Windsor Mills, Ontario.

SASKATCHEWAN.

Saskatoon.

The Quaker Oat Company's plant here will be enlarged so that the output of the plant will be increased from 600 to 1,200 barrels of Quaker flour daily. The new machinery will cost when installed in the neighborhood of $45,000. A part of the plant previously unoccupied will be used to house the new plant.

Grand Rapids.

D. B. McDonald, Winnipeg, promoter of the Manitoba Power, Pulp and Paper Co., to be established at Grand Rapids on the Saskatchewan River, states that all plans for the project have been prepared. They include a sawmill, paper factory, pulp mill and hydro-electric power transmission plant. The capacity of the pulp and paper mills will be 100 tons a day. The whole scheme will mean an outlay of perhaps $2,000,000.

Weyburn.

The plant of the Saskatchewan Door Company was entirely destroyed by fire recently.

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Ask Your Jobber for



Brand

WROUGHT PIPE BLACK AND GALVANIZED 1/8 TO 4 INCH

Thoroughly inspected and tested to 600 lbs. pressure and branded.

Also BOLTS, NUTS, RIVETS—All Kinds

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WORKS: LACHINE CANAL MONTREAL, CANADA

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Total Assets.....$235,000,000

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H. A. CLARK, Toronto
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
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FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates, may be had upon applying to the Chairman.

HON. F. G. MACDIARMID,
Minister of Public Works and Highways.

W. C. McGHIE,
Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID,
Minister of Public Works.

D. M. MEDCALF,
Chief Inspector of Steam Boilers.

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A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

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*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
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*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal. Que.

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*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton. Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
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Peterboro Canoe Co., Ltd., Peterboro, Ont.

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*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, heating
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
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Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean. Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

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Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

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Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

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*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement See Index, Page 569

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

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*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit. Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BRONZE, Cored Bars
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

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Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Beeckh Bros. Co., Toronto.

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*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company. Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co., Welland, Ont.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited. Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS AND CLOCK MOVEMENTS
The Arthur Pequegnat Clock Co., Berlin, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COFFEE IMPORTERS, Roasters and Manufacturers
C. H. Cochrane & Co., Ottawa, Ont.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited, Toronto.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED BOXES
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORRUGATED PAPER
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.
Canadian Wm. A. Rogers, Ltd.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

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FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*Canadian H. W. Johns-Manville Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peck & Co., Limited. Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
Gurney Foundry Co., Limited, Toronto.
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, house and office
Canada Furniture Mfrs., Limited, Woodstock, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.
Gurney Foundry Co., Limited, Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland. Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

* For Display Advertisement See Index, Page 569

JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited. London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Toronto.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MEATS, canned
The Wm. Davies Co, Ltd., Toronto.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Montreal, Que.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement See Index Page 569

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited. Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A. Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

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PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERWARE
Toronto Silver Plate Co., Limited, Toronto.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*For Display Advertisement See Index, Page 569

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKETS, gray iron and flint rim
*Canadian Link Belt Co., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Sirocco Co., Windsor, Ont.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited. Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Pedlar People, Ltd., Oshawa, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Henry Hope & Sons, Ltd., Toronto.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited. Hamilton.

TELEPHONE ACCESSORIES
*Northern Electric Co., Limited, Montreal.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Gurney Foundry Co., Ltd., Toronto.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SURFACERS
*Berlin Machine Works, Ltd., Hamilton.

SWITCHBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

THEATRE CURTAINS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSMISSION MACHINERY
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*The Canadian Sirocco Co., Ltd., Windsor, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

TUMBLERS, foundry
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte, Ont.

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
John Morrow Screw and Nut Co., Ltd., Ingersoll.
Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Kerr Engine Co, Ltd., Walkerville.

VALVES, for steam and water
Jenkins Bros., Ltd., Montreal, Que.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
*Dougall Varnish Co., Ltd., Montreal.
R. C. Jamieson & Co, Ltd., Montreal, Que.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL BOARDS
*Bird & Son, Hamilton, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que

WASHERS
*The Steel Company of Canada, Limited, Hamilton.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATER-PROOF CEMENT COATING
Benjamin Moore & Co, Ltd., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

*For Display Advertisement See Index, Page 569

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.

WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.

WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont

WHITE ENAMEL
*Berry Bros., Ltd., Winnipeg, Man.

WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES
Daly & Morin, Montreal, Que.

WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

WIRE CLOTH
*Canada Wire & Iron Goods Co. Hamilton.
C. H. Johnston & Sons, Ltd., Montreal. Que.

WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.

WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.

WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.

WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.

WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.

WROUGHT IRON PIPE
*The Steel Compony of Canada. Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement See Index Page 569

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you remember proved disastrous for the fellow who hadn't made sure of his connections in the line. Pipe couplings work just the same way. You can bank on

DART UNION PIPE COUPLINGS

staying on and always being tight.

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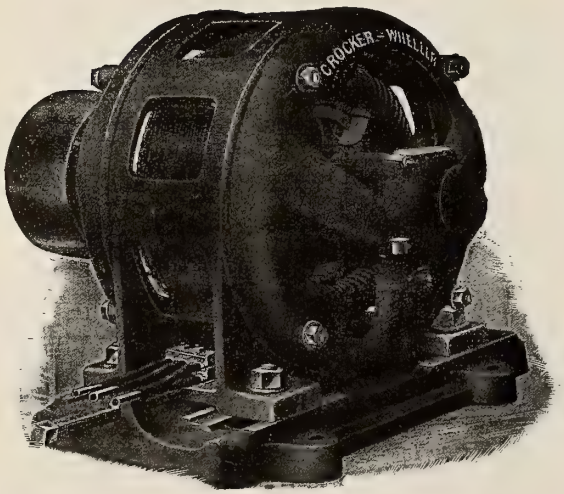
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Excellent Efficiency

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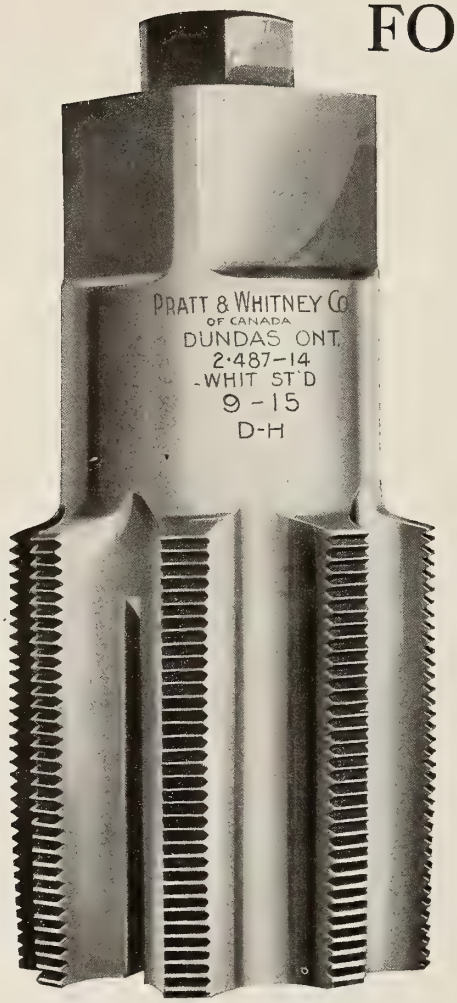
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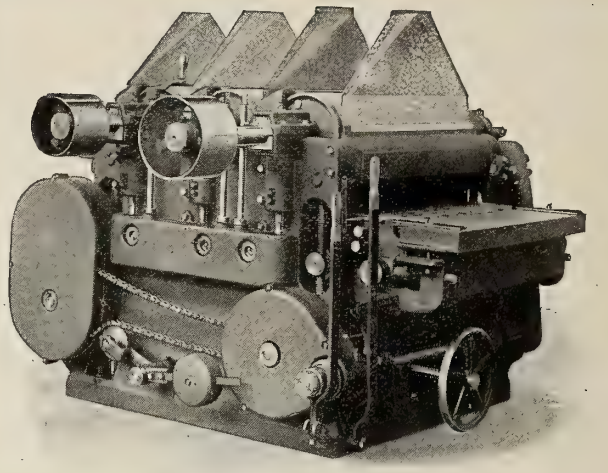
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Is Your Sander Specially Adapted To Its Work?



ENDLESS BED SANDER

MANY factories have much large surface sanding, combined with other sanding jobs of a general nature. For these conditions the proper machine is the

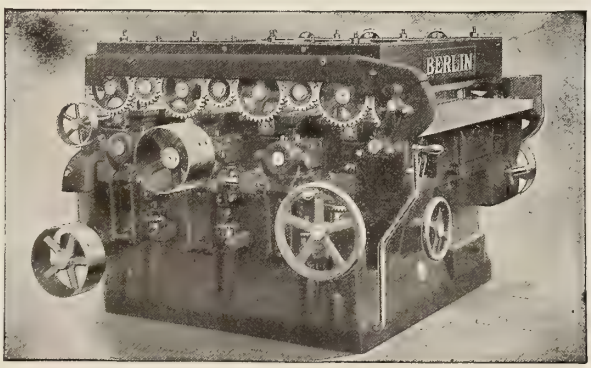
Yates (formerly BERLIN) Roll Feed Sander

It is especially adapted to sanding large quantities of wide flat stock. The Roll Feed will handle all the stock that can be fed into it all day long. It puts on a finish ready for the stainer's brush. Changes feeds with sliding gears like an auto. Feed can be instantly reversed, preventing expensive accidents. Single handwheel adjusts drums, separately or simultaneously. Hundreds of installations all over the world.

Investigate your sanders. Make sure each is doing all that can be done on that kind of work—that it's producing the best possible finish—that it isn't eating up instead of piling up profits.

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ROLL FEED SANDER



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Yates (formerly BERLIN) Endless Bed Sander

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When hopper-fed the rubber discs on the travelling bed keep a machine-width stream of stock passing under the drums constantly. Its output is four to six times that of a roll feeder. Finished surfaces are left smooth as glass. Drums have a micrometer adjustment to 1.1000 of an inch. Adjustments are within easy reaching control of the operator. Feed bed has an automatic stop, both top and bottom, which prevents accident when using power hoist.

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U.S. Plant - - Beloit, Wis.

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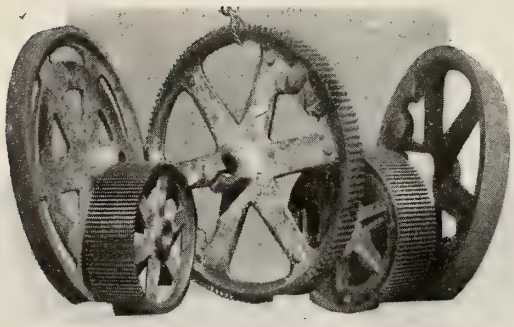
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Heavy Steel Gears For Specially Severe Service, Heavy Duty or High Speed.

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Boeckh's begin the manufacture of Set-in-Rubber Brushes

SCIENCE and experiment are always evolving better ways of doing or making things—brushes among them; and when science and experiment have reached sound conclusions it is for us all to accept the results.

Speaking for ourselves; we've been making brushes in Canada for 60 years. The brushes we made 60 years ago were the best brushes made at the time, but they were far behind the brushes we have been making during recent years. We have learned better ways, because we have not been mind bound. Our own labors and genius in our realm have enabled us to improve our business in every particular, and we expect that the future still will continue to reveal to us new things and better things—though we are frank to confess that it does seem that perfection has already been attained.

All this is introductory to the announcement which we have to make; viz., we are installing a plant for the manufacture of Set-in-Rubber Brushes.

We'll continue to make **"STEEL-GRIP" Brushes,** the absolutely perfect painter's tool, as Set-in-Rubber Brushes cannot excel them as a working tool, but because a demand has sprung up for the Set-in-Rubber Brush, we are making this Brush as well.

Concerning **Boeckh's Set-in-Rubber Brushes,** the following particulars are given :

The Bristle and Hair in these brushes, as in all our Painters' Brushes, are of the highest grade, and are prepared by our Special process, which retains the elasticity and softness of ends—the part of a brush upon which good results depend.

Boeckh's Brushes, as a consequence, are perfect in quality and wear long and satisfactorily.

Each individual Bristle is held secure by Pure, best quality Rubber, not a rubber cement containing mostly cold tar pitch or other cheaper materials. The butts of the Bristles are completely covered with strictly Pure Rubber, while in a semi-liquid state, and then vulcanized until it is absolutely hard and will not under any circumstances permit of the Bristles coming out.

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As we have been manufacturing Brushes for over sixty years we know how to combine quality, style and finish at the lowest possible cost, and to supply the trade with guaranteed goods that, in all cases, give absolutely satisfactory service.

The Boeckh Bros. Company, Ltd.

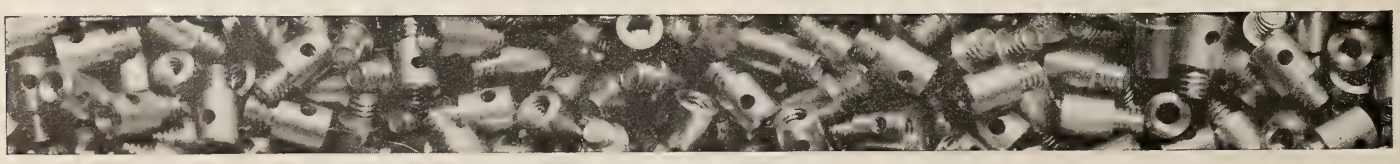
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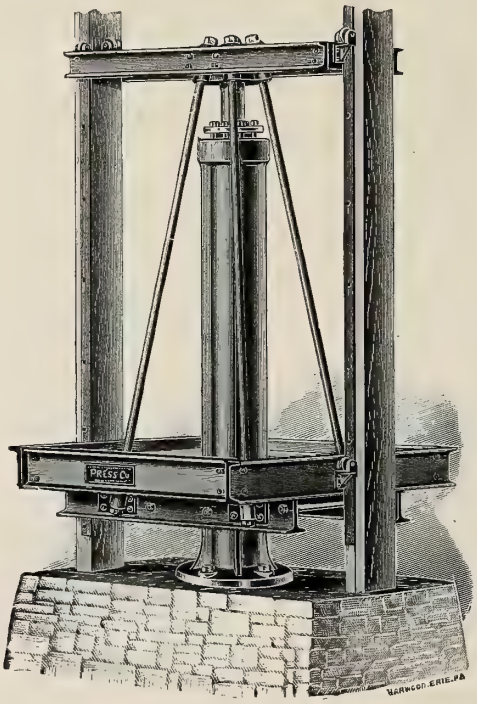
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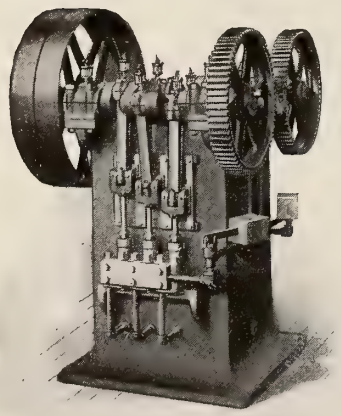
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Accumulators up to 18"x15'

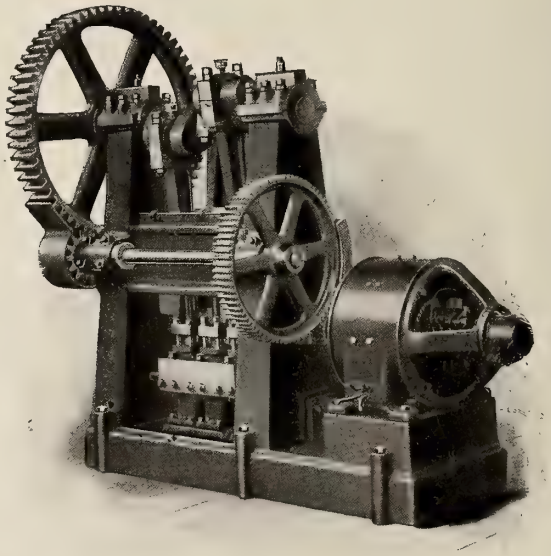


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Pumps up to 100-gallon capacity



Any pressure desired



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FIVE MODELS

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Special grades for novelty, stationery and bookbinding requirements and for vehicle and railway car upholstering.

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The 1917 Ford Touring Car

THE old, reliable Ford Chassis—Stream line effect—crown fenders—tapered hood—new radiator with increased cooling surface.

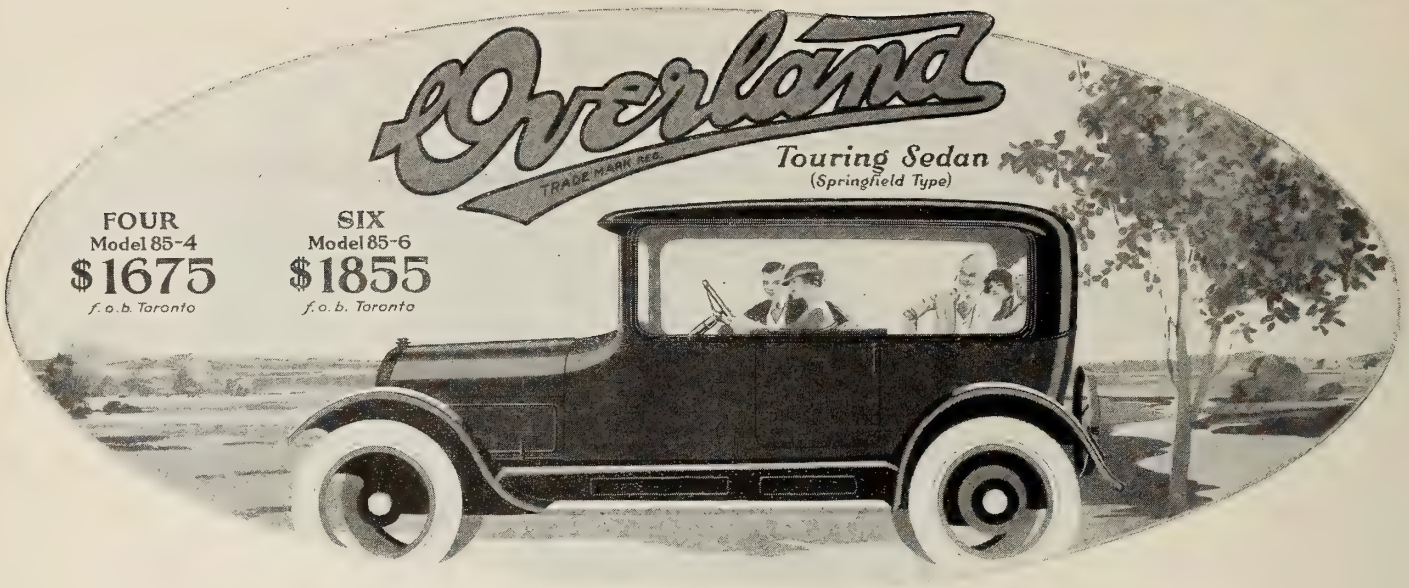
Chassis -	$450	Coupelet	$695
Runabout	475	Town Car	780
Touring Car	495	Sedan -	890

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These two new Overlands are the first full size Touring Sedans ever offered to the public at moderate prices.

Such cars at such prices are possible only because of the economies made possible by our enormous production.

And they fill a long felt want.

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The change can be made either way easily and quickly and with no more effort than it takes to raise or lower the windows.

And, either open or closed, these cars are beautiful in appearance—have lots of style—are absolutely free from the suggestion of makeshift which is so apparent in separate sedan tops for touring cars.

But there are many other features to commend these cars, in addition to their perfect convertibility.

The four has the 35 horsepower motor which has made the Overland famous for years in its latest improved en bloc type.

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Overland

TRADE MARK REG.

These New Convertible Cars Fill a Want Long Felt by Motorists

The six has a 40 horsepower en bloc motor with wonderful flexibility and lightning pick-up.

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See these new cars at once.

You will be amazed that such beautifully finished, luxurious Touring Sedans can be built to sell at such low prices.

See the Overland dealer before it is too late to get an early delivery.

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SPECIFICATIONS

Motors—en bloc type—The Four, 35 horsepower—the Six, 35-40 horsepower
Wheelbase—The Four, 112 inches—the Six, 116 inches

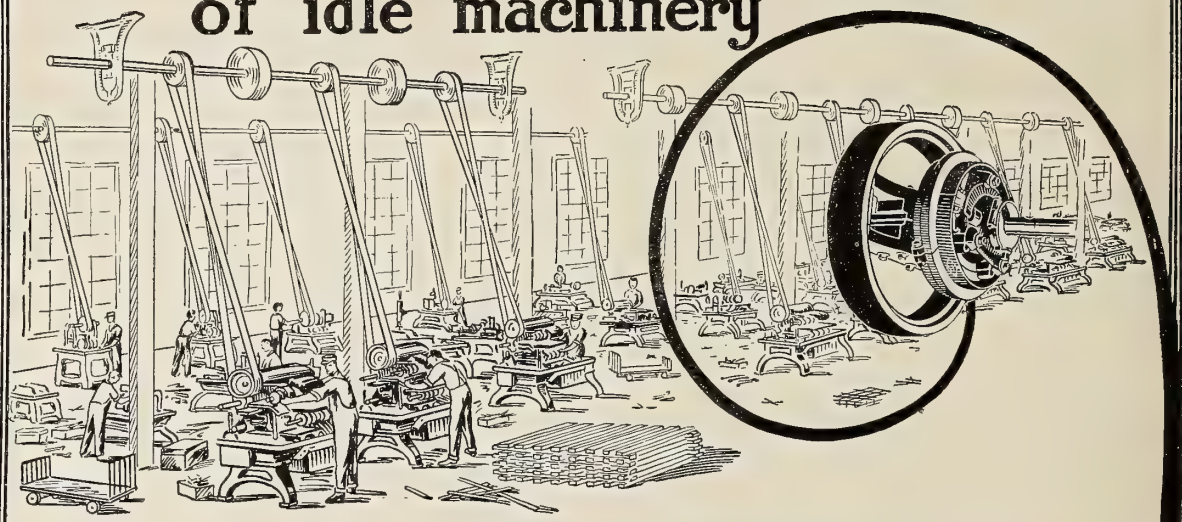
33 x 4½ inch tires—non-skid rear
Gasoline tank and gauge at rear
Auto-Lite starting and lighting system
Cantilever rear springs
Richly carpeted floor
Electric control buttons on steering column
Vacuum tank fuel feed
Improved Seat Springs
Divided front seats with wide aisle between
Attractive cloth upholstery
Interior dome light

Willys-Overland Limited
Head Office and Works, West Toronto, Canada



Cut-off

the waste power of idle machinery

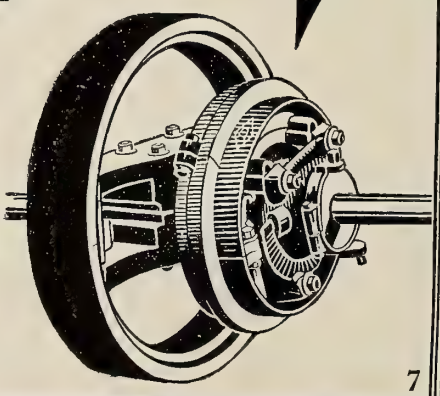


With *Dodge Friction Clutch* you can shut down parts of your Factory not operating

A GOOD friction clutch mechanism when used either as a clutch pully or a cut-off coupling is a mighty good thing in many places around a mill or factory—but when you can add to this the "split" feature you've got something real to talk about—most good mechanics know this, the trick is to get "the Boss" to know it. The timely throwing out of a Clutch Lever often prevents serious accident.

DODGE

SPLIT FRICTION CLUTCH



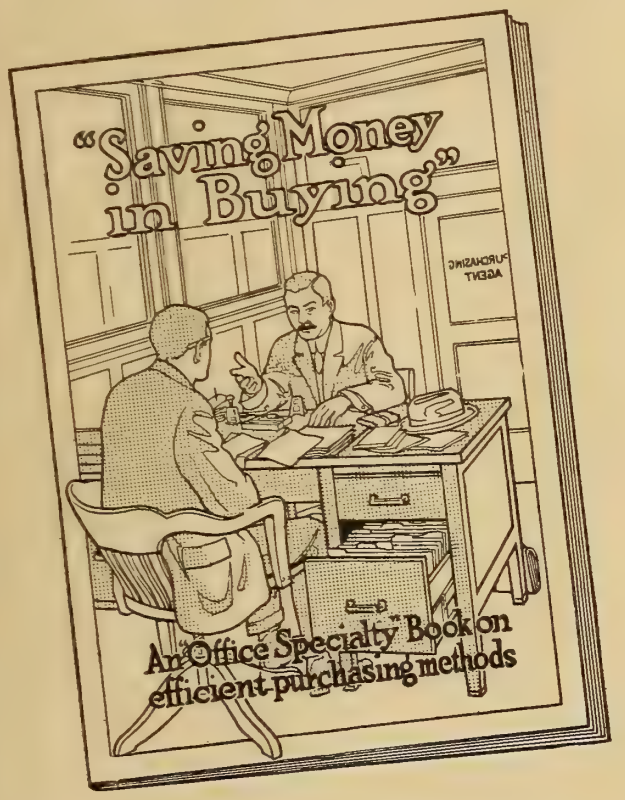
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7

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Hold Up Your Stationery to the Light

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It is your guarantee for

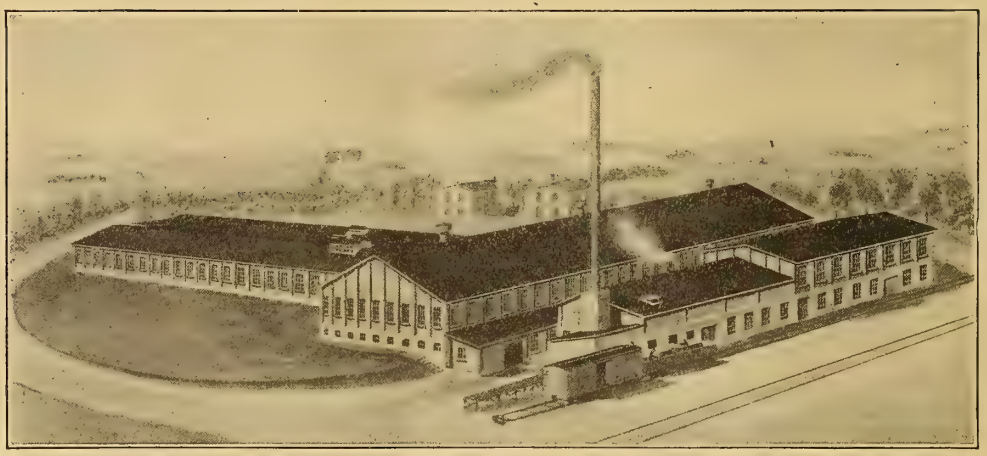
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The Largest and Best Equipped Mill in Canada for the Coating of Paper.

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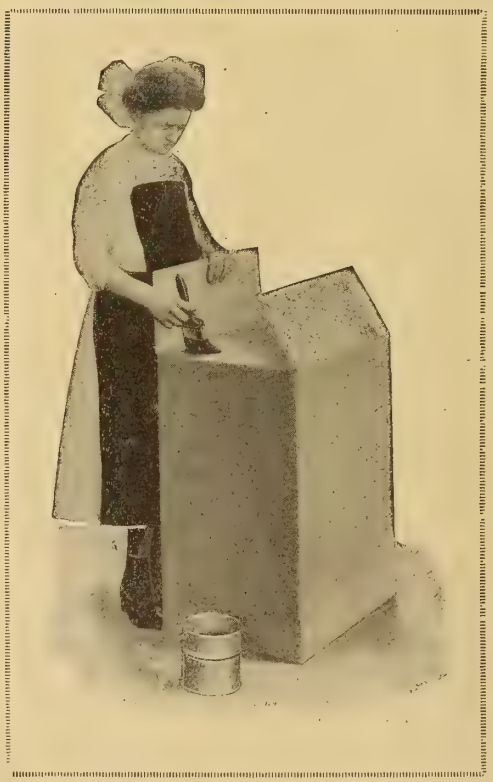


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Corrugated Shipping Cases

Are made from special fibre stock, and are constructed so as to protect the goods from damage or breakage. At the same time saves 75 p.c. of weight of wooden cases.

These boxes comply with the freight classification and are accepted at the same rate as goods packed in wooden boxes. Can be used for shipping by freight or express any goods in reasonable weight package.

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Office and Factory - - 353 Pape Avenue, Toronto

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Incorporated 1869

Capital Authorized.....$25,000,000
Capital Paid Up.....$11,820,000
Reserve & Undivided Profits..$13,236,000
Total Assets.....$235,000,000

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Extension of Canadian Trade

The Bank will make enquiries into the possibilities and requirements of markets abroad for exporters or importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents it has unusual facilities for this work.

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NOTICE

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W. T. E. BRENNAGH, Port Arthur
H. A. CLARK, Toronto
MISS M. CARLYLE, Toronto
W. S. FORSTER, Ottawa
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ROBT. HUNGERFORD, Toronto
FRED KELLOND, Hamilton
S. J. MALLION, Stratford
MRS. A. BROWN-REDDICK, Toronto
H. J. TUTT, Toronto

Persons having business with any of the Inspectors should communicate with them at the Parliament Bldgs., Toronto.

Phone Main 5800

HON. JAS. S. DUFF,
Minister of Agriculture.

Established 1849

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NOTICE

TO STATIONARY AND HOISTING ENGINEERS

Everyone operating a STATIONARY steam plant of 50 h.p. or over in the Province of Ontario must hold a Stationary Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Everyone operating a HOISTING steam plant working at a pressure of 20 pounds or over irrespective of horse power, and used for hoisting in structural operations or excavating purposes, in the Province of Ontario, must hold a Hoisting Engineer's Certificate from the Board of Stationary and Hoisting Engineers. Anyone operating such a plant without a Certificate is liable to the penalties set forth in the Stationary and Hoisting Engineers' Act.

Application forms for obtaining STATIONARY or HOISTING Engineers' Certificates may be had upon applying to the Chairman.

HON. F. G. MACDIARMID, Minister of Public Works and Highways.
W. C. McGHIE, Chairman of Board.

NOTICE

To Manufacturers, Dealers, and Users of Steam Boilers.

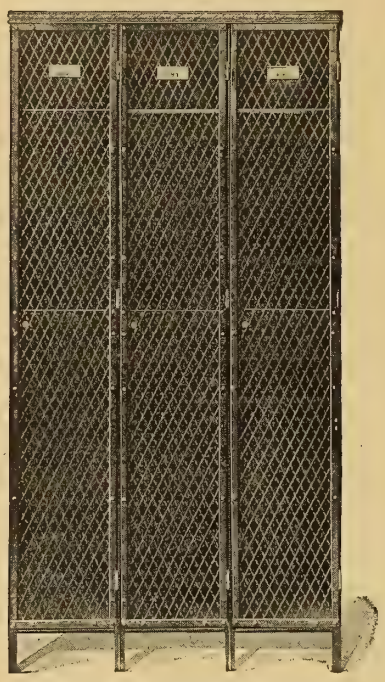
All steam boilers built in, or entering the Province of Ontario, and boilers exchanged or repaired, are subject to Government Inspection as prescribed in the Steam Boilers Act, 3 George V., C. 61.

Before any work of repair or alteration is commenced on any boiler, notice must be sent to the Department stating the nature and extent of the repairs or alterations proposed to be made. If the Chief Inspector should consider such repairs or alterations of an extensive character, the boiler must be inspected in accordance with the Regulations by an Inspector authorized under the Act.

All communications should be addressed to the Steam Boiler Branch, Department of Public Works, Parliament Bldgs., Toronto.

HON. F. G. MACDIARMID, Minister of Public Works.
D. M. MEDCALF, Chief Inspector of Steam Boilers.

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STEEL CLOTHES LOCKER



STEEL STOOLS with wood seat
20, 22, 24, 26 inches high



STEEL TABLES
All sizes



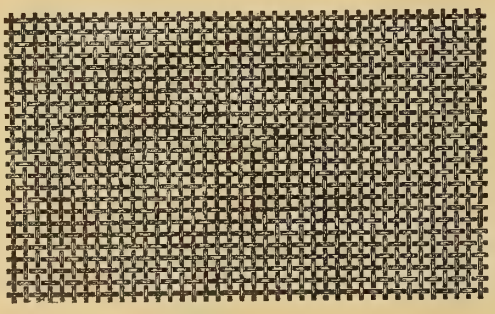
TOOL DRAWERS, each with separate key and masterkeyed. Brass number plate and pull

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"Every Casting Clean and Uniform"

This is the reason our customers are sending us repeat orders on high-grade

GREY IRON CASTINGS
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PLATING AND FINISHING OF CAST IRON FIXTURE PARTS AND ELECTRO GALVANIZING

We use no scrap when melting our iron, and we are more than commonly careful to see that everything conduces to flawless material and workmanship. A trial order from you will demonstrate the superiority of our service.

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Works: PRESTON, CANADA

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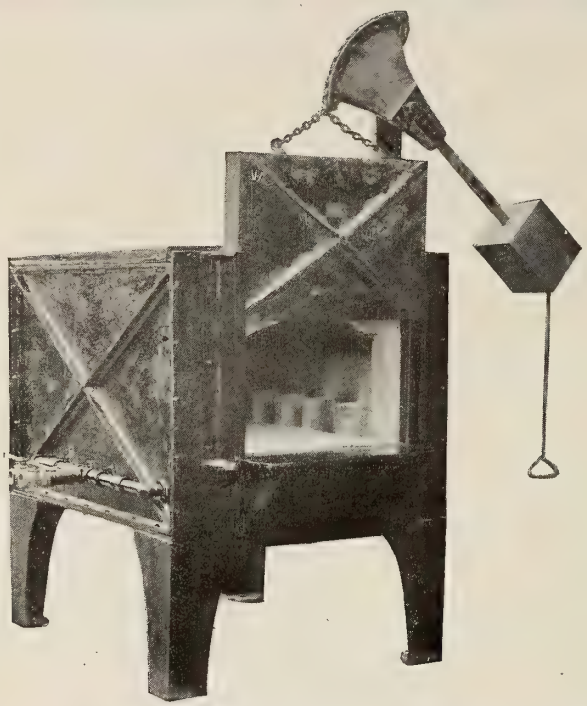
in one of the BEST industrial towns of Ontario.

PRIVATE RAILWAY SIDING

Splendid Shipping Facilities, G.T.R. and C.P.R.

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IF IT WILL NOT DO YOUR WORK

TELL US the work to be done and we will supply a furnace to do it. If, at the end of thirty days, the furnace does not demonstrate to your entire satisfaction that it will do the work, return it.

CANADIAN HOSKINS LIMITED

Electric, Gas and Oil Furnaces and Pyrometers

Sales Offices:
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NOW MADE IN CANADA **"STELLITE"** CONTAINS NO STEEL

The Metal Par Excellence for Cutting Steel and Cast Iron at High Speeds

The Advantage of the Stellite tool is twofold. First, it will do from 20 to 100 per cent. more work in a given time than a steel tool of the same dimensions, working under the same conditions. It takes bigger cuts at a higher speed than any tool steel; second, it does not require so much grinding, and thus utilizes the time of the operator at the machine instead of at the emery wheel.

The Reason the Stellite tool cuts so much faster than steel is because the Stellite tool is able to cut continuously at a much higher temperature than any steel tool; it will not burn, and the temper stays in the tool. Sometimes the speed of a lathe becomes so great that the edge of the Stellite tool will become visibly red, and remain so during an entire cut without the slightest injury.

Stellite is to the best high-speed steel what high-speed steel is to ordinary steel.
Costs more at the beginning, but is by far the cheapest and most profitable in the end.

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WE HAVE EXCELLENT
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BRASS, BRONZE
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We Save You Money

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DROP FORGINGS

OF ALL KINDS

Canadian Billings & Spencer
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The Price is Low—

only when it procures a quality that fills the bill. "Dirt cheap" stuff is generally worth less than you pay. What's the good of a steel casting that costs next to nothing if its use will depreciate your product and lessen its good repute?

USE JOLIETTE STEEL CASTINGS

They're not high-priced—but they're not too cheap for quality.

Our aim is to make permanent friends of manufacturers who want flawless steel castings promptly delivered at a reasonable price.

Perhaps, you are looking for a service just like this! Your inquiry will be welcomed and promptly answered.

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Manganese, Chrome, and Nickel Steel Castings from ¼ of a pound to 30,000 pounds

Steel and Semi-Steel Machine Moulded Gears any size up to 18 feet in diameter without the use of patterns

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Acid Open Hearth Steel Castings for all purposes

Dominion Steel Foundry Company, Limited

Annual Capacity 15,000 Tons

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ELECTRIC STEEL CASTINGS

WE CAN SUPPLY

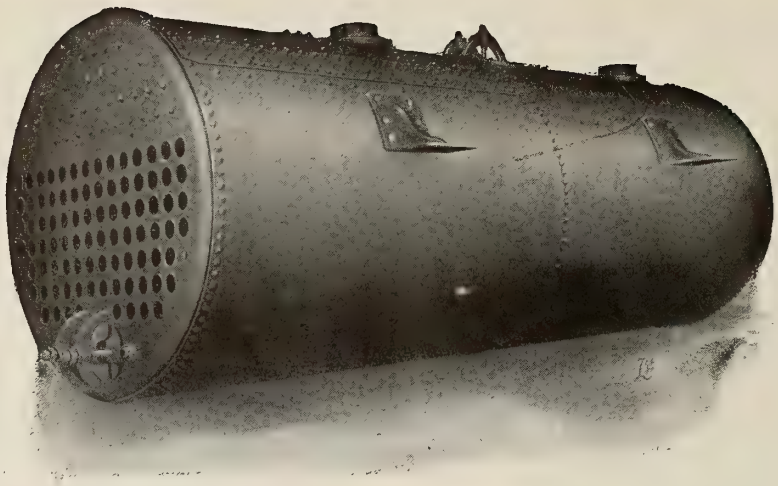
Carbon Manganese, Alloy, Steel Castings Forging Ingots, Etc.

Write for prices and particulars

The Electric Steel and Metals Company, Limited

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BOILERS



STANDARD RETURN TUBULAR BOILER

We make boilers of all kinds for any service.

We are also sole Canadian makers of Erie City Water Tube Boilers, Vertical and Horizontal.

The large number of pleased and satisfied owners of "INGLIS" Boilers is our best advertisement.

For (52) fifty-two years our boilers have been the standard. We have installations of our different types of boilers, which our representatives will be pleased to show to prospective purchasers. Write us for prices, etc.

INGLIS' PRODUCTS ARE "MADE-IN-CANADA"

The John Inglis Company, Limited

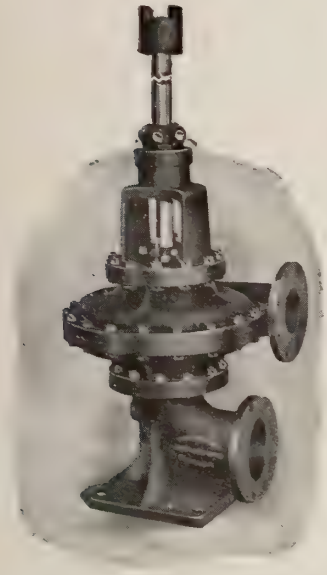
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14 Strachan Avenue Toronto, Canada

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WATEROUS SPLIT BASE PUMPS

For Industrial Service



Waterous Pumps are built in sizes up to 14-inch discharge opening, with capacity of from 120 to 7,000 gallons per minute.

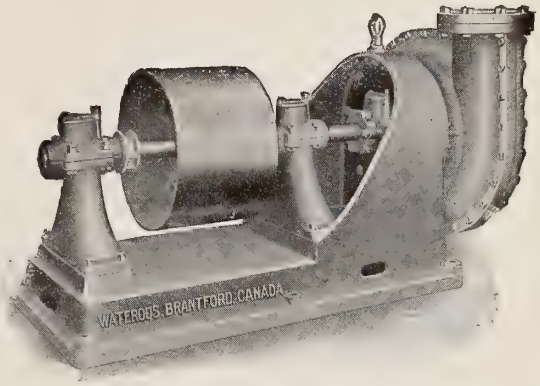
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Built for belt, motor or engine drive

They will handle foaming, non-foaming and precipitating liquids, pulp stuff and water containing up to 20% suspended matter.

SPECIAL FEATURES — Split bronze, packing glands, reversible barrel and runners, extra large bearings. Great strength and simplicity distinguish these pumps. No matter what kind of work you are doing we have the *right* pump and the *best* pump for your work.

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NOTICE THE SPLIT BASE!

This is a special Waterous feature. It permits the working parts to be lifted bodily from the base without disturbing the foundation. This is of great benefit when pump is set in concrete or when the suction flange is placed close to a wall where access is difficult.

The Waterous Engine Works Co., Ltd., Brantford, Can.

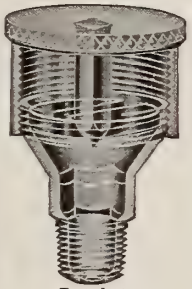
PRESSED STEEL AND BRASS GREASE CUPS OIL HOLE COVERS, OIL CUPS

DOWEL PINS

SMALL STAMPINGS



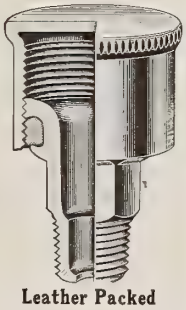
Plain



Ratchet



Style "D"



Leather Packed

Write for Prices and Catalogues

Samples Sent on Application

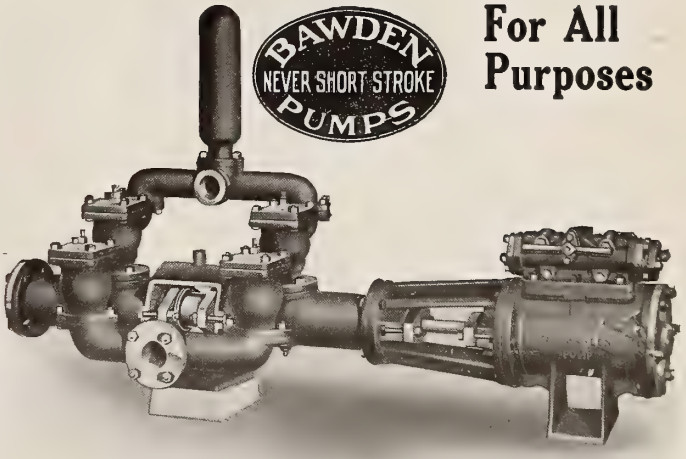
THE CANADIAN WINKLEY CO. LIMITED

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BAWDEN PUMPS

BAWDEN NEVER SHORT STROKE PUMPS

For All Purposes



The pumps backed by a grand reputation and the finest installation in Canada.

Bawden Basket Strainers and Pipe Flanges

THE BAWDEN MACHINE CO., Ltd.

133 Sterling Road, Toronto, Canada

Show This Advertisement to Your Power Man—

A SUPERINTENDENT WRITES:

Oshawa, Ont., March 30th, 1916.

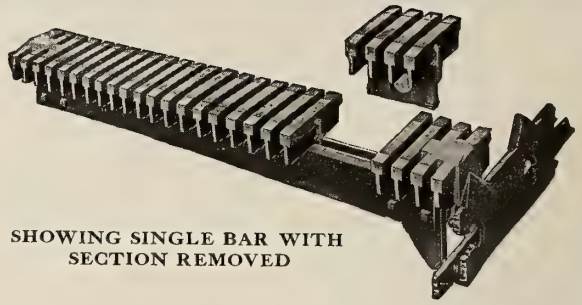
Galt Foundry Co.,
Galt, Ont.

Gentlemen:—

Some months ago we ordered one set of McNaughton Rocking Grates for our No. 1 Boiler. We have been using this continually ever since, and they gave us such good satisfaction, that we followed up the order with two more sets for our No. 2 and No. 3 boilers. We may also add that these are giving entire satisfaction and showing a clean fire at all times.

Yours truly,
(Signature).....

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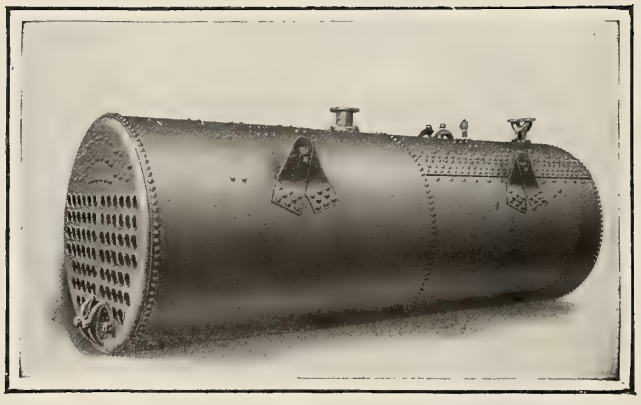
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What are you doing with these units? Are you letting them escape while you spend **more** money for coal in producing useless heat?

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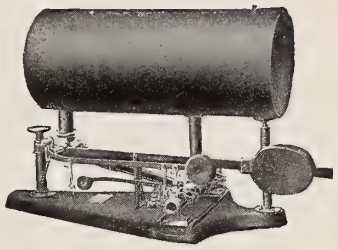
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The *Morehead* **Back to Boiler SYSTEM**

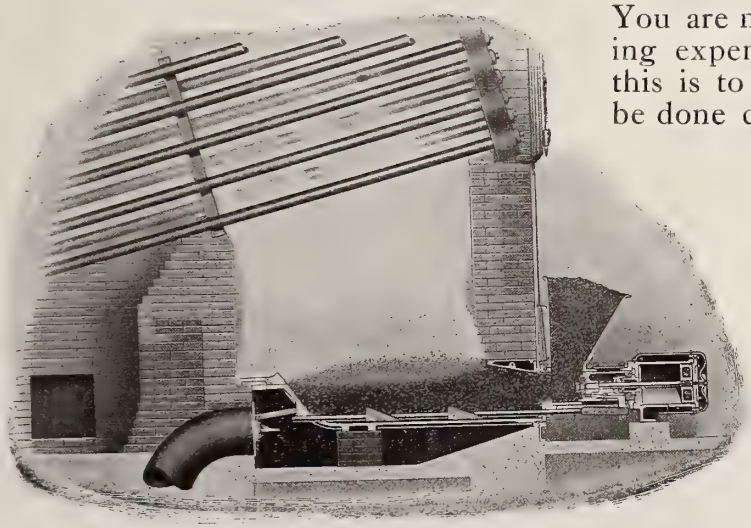
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Made in Canada

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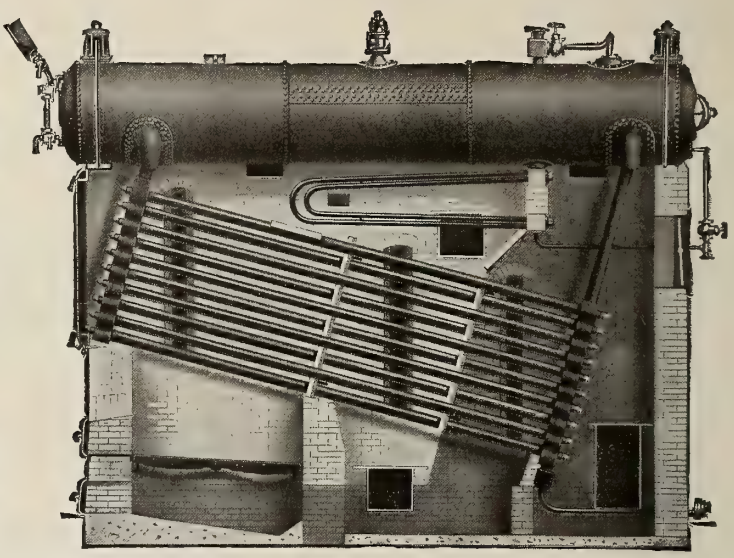
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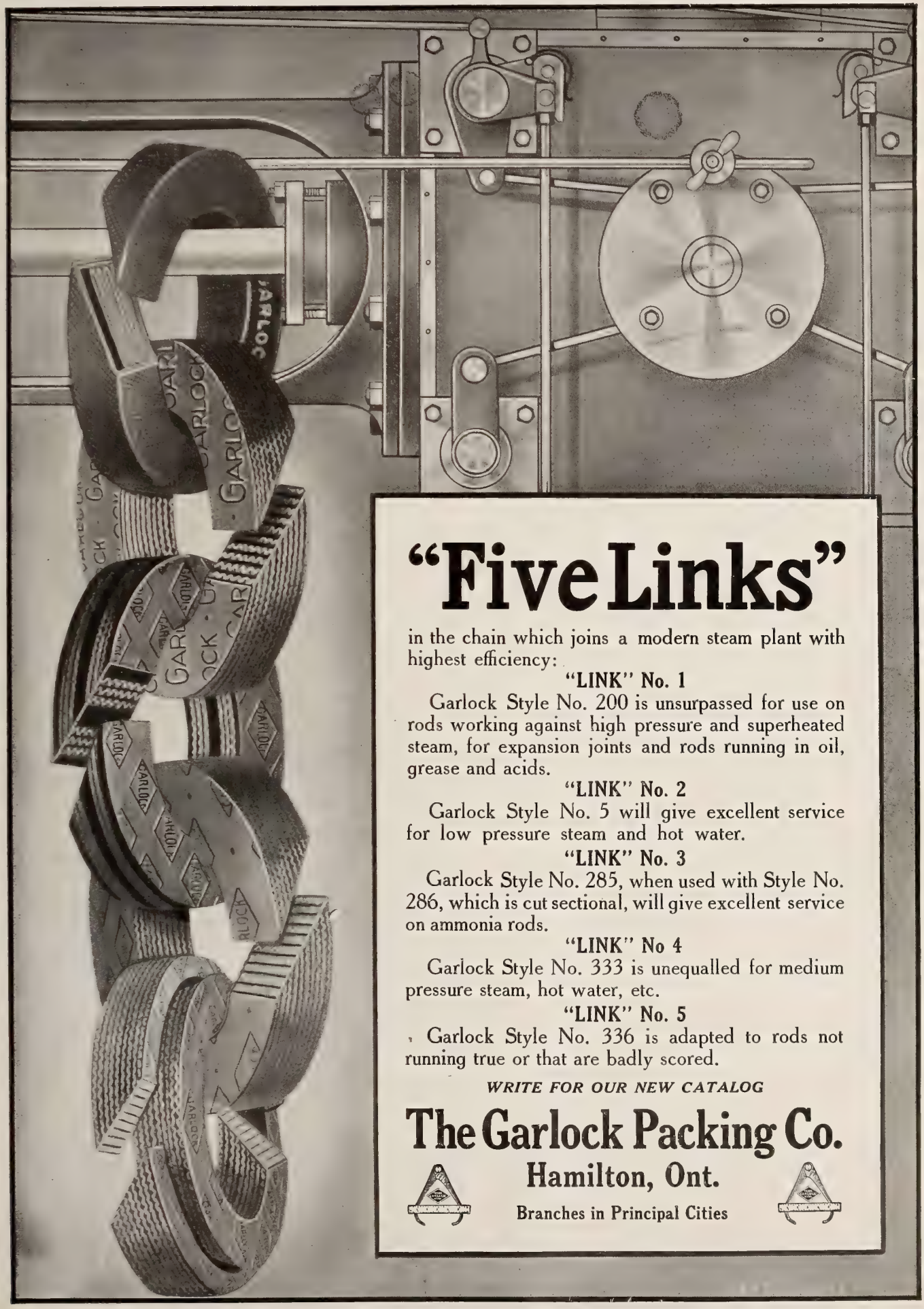
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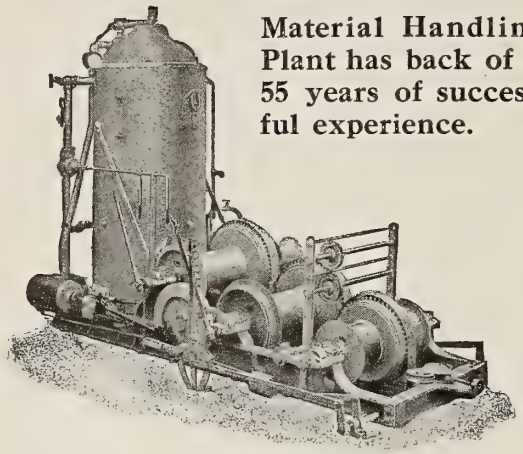
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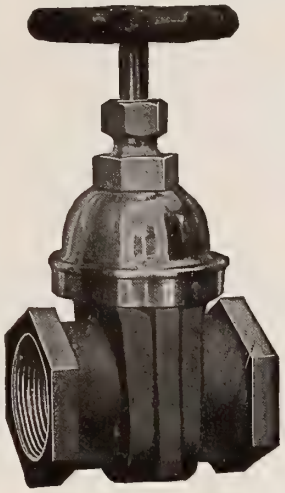
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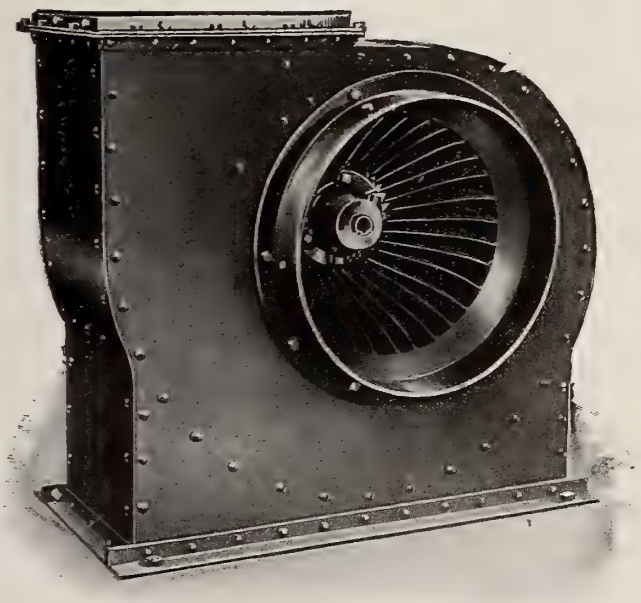
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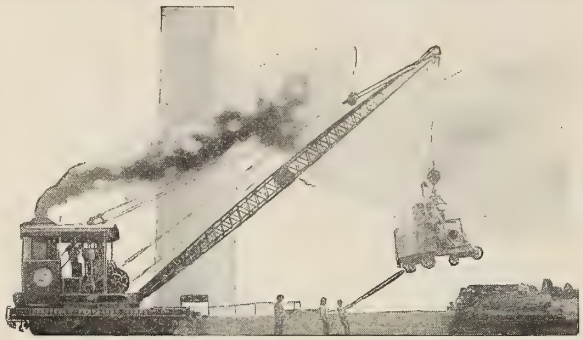
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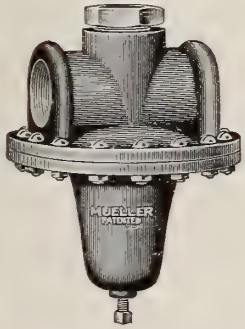


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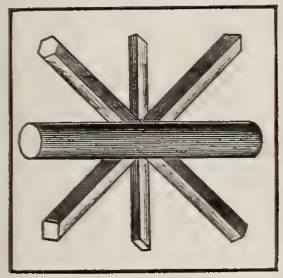
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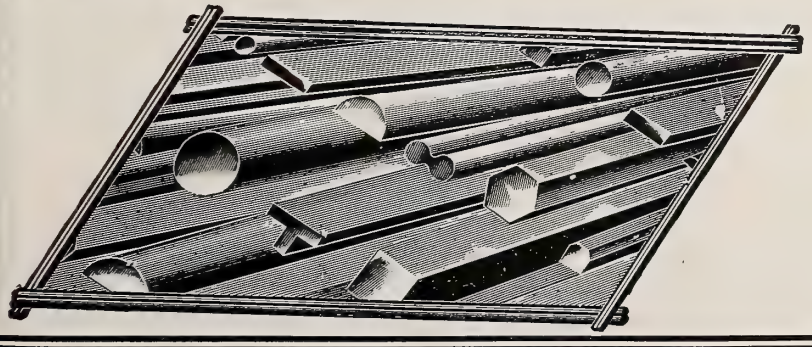
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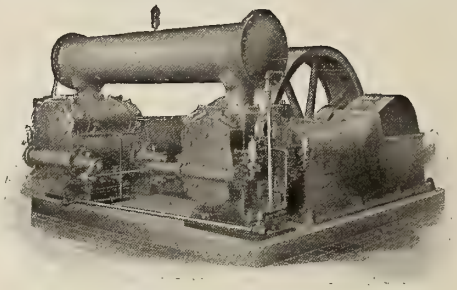
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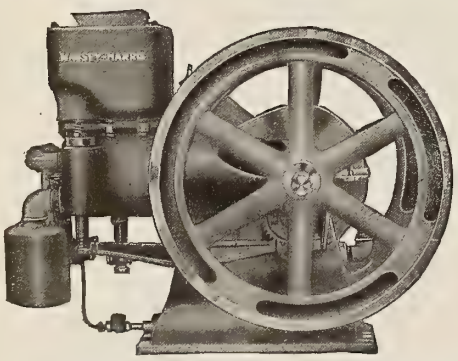
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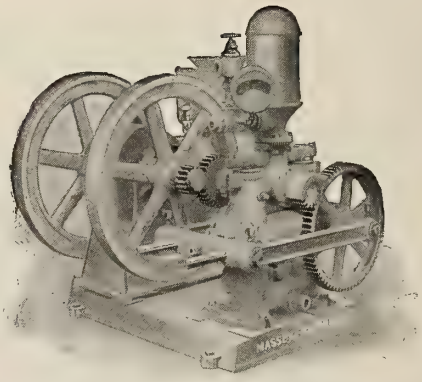
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that will give unequalled service on this material in
HIGH-SPEED MACHINES

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VICTOR HACK SAWS Get a Box and Try 'em

McKenzie Engine Lathe

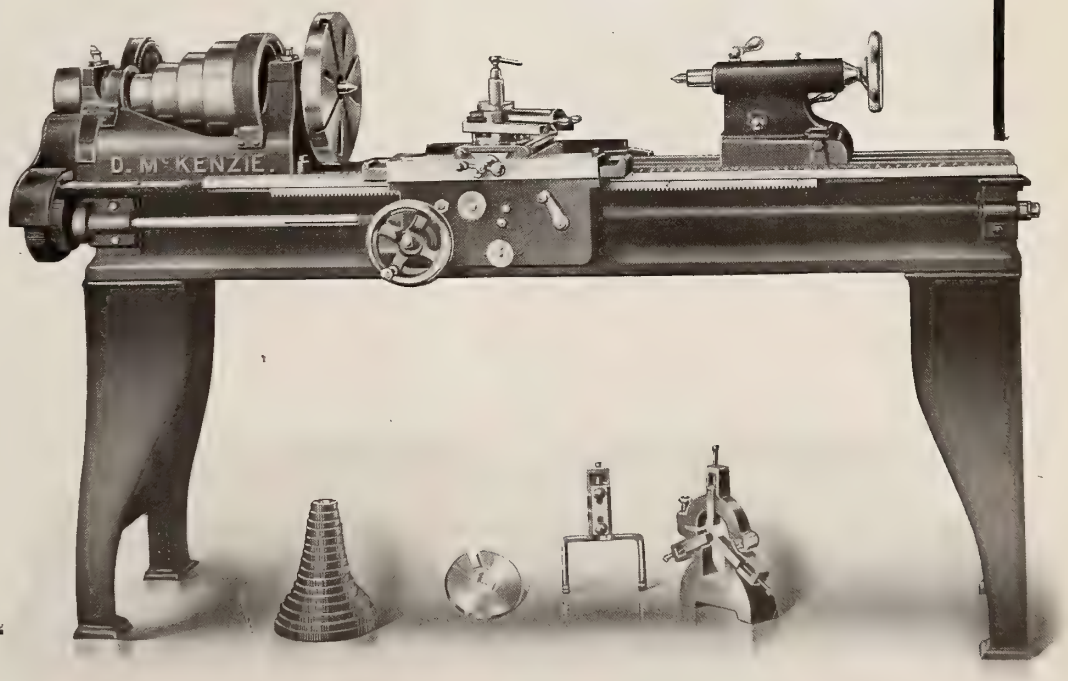
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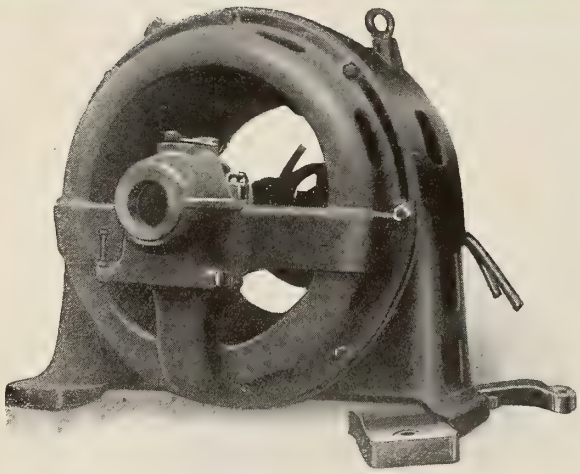
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MONTREAL - CANADA

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SHAWINIGAN FALLS, QUEBEC

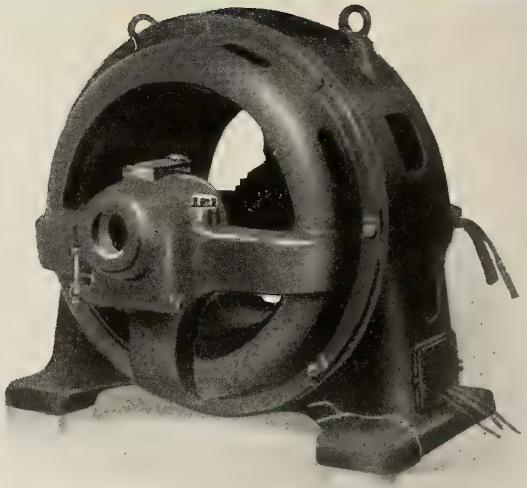
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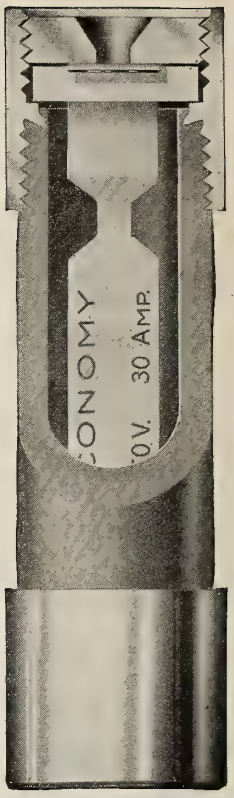
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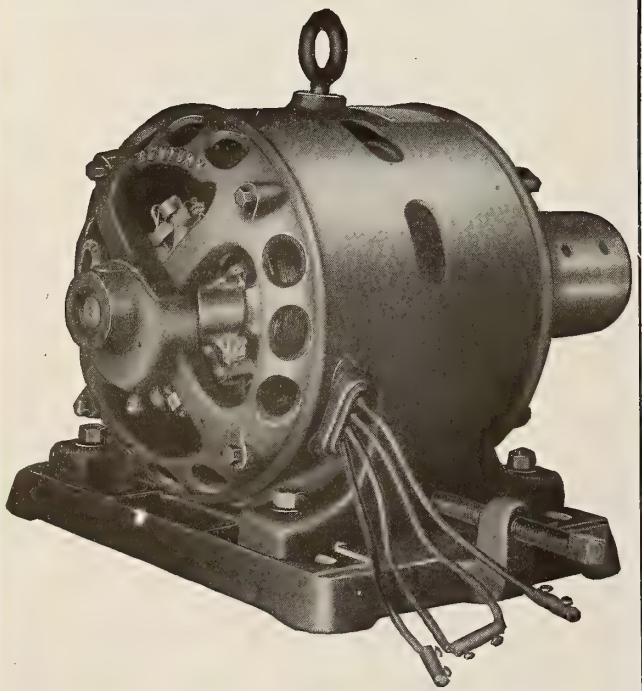
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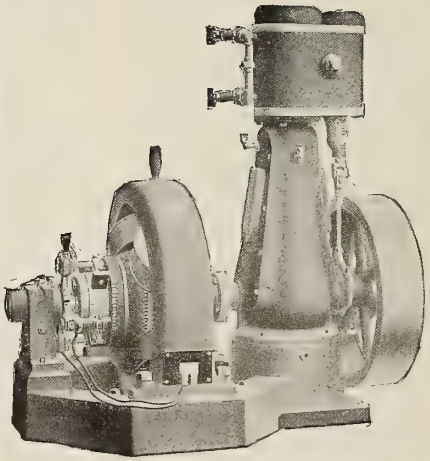
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No Upkeep Cost for 20 Years —*Absolutely Guaranteed*

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Our only requirements are that the roofing contractor shall be satisfactory to us and that the Specification dated May 1, 1916, shall be strictly followed.

All you have to do to secure the 20 year Guaranty Bond is to give the roofing contractors copies of The Barrett Specification *of that date,* and tell them to figure on that basis. From the buyer's standpoint the arrangement is practically ideal, for under the plan the owner is assured of having an inspector on the roof whose only interest is to make it *as good as possible*—for if it isn't right we alone are the loser.

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Be sure your next roof carries this 20 year Guaranty Bond

It is something quite different. It is issued, not by an individual or a manufacturer, but by one of the largest and best known Surety Companies and is a *legal, workable document that has no loopholes.*

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The CANADIAN MANUFACTURERS ASSOCIATION.

INCORPORATED.

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More About National Service.

THE Trades and Labor Congress of Canada, like the Nationalists in Quebec, have come out flat-footed against conscription. In a way we don't blame them for voicing their objections to a thing with so ugly a name. As a matter of fact, the thing would never have had such a name, and would never have had so many enemies in Canada if our Government had been possessed of sufficient foresight to bring in a reasonable Act to provide for national service, and to see to it that the features which such a measure would naturally include were thoroughly understood by all classes.

Supporters of the Government are accustomed to reply, when national service is urged upon them, that it is a political impossibility because of the attitude of Quebec. Despite the opinion of men who ought to have better opportunities for feeling the pulse of Quebec than we have, we feel no hesitation in expressing our firm conviction that national service would be welcomed in Quebec, if Quebec only understood what national service really meant.

The French-Canadian has been fed up by men of the Bourassa type with arguments against conscription until, to judge by the press of that province, a revolt might ensue from any attempt to bring it into force. The French-Canadian is not peculiar in his dislike of conscription. Compulsory service in the army would go sorely against the grain of many an English-Canadian, as the action of the Trades and Labor Congress clearly shows. But whatever his views upon conscription may be, the French-Canadian, as a type, is essentially loyal. His love of country is deep and abiding. If properly appealed to, to serve his country, the French-Canadian will respond, but he refuses to be bullied by a people who, since Confederation, have continuously ignored him, and who now seem to take a peculiar delight in pointing him out as a slacker, and an object of odium or derision.

The French-Canadian is a man who marries at a much earlier age than the English-Canadian. The rule of single men first, without any other consideration, would, therefore, point to the weight of responsibility for enlistment resting upon Ontario. The French-Canadian, moreover, is a man who raises a large family. He makes his living, for the most part, by cultivating the soil, and on the farms of Quebec it is the rule, rather than the exception, to find families of six, eight or even ten. In a community of English-Canadians, the father of a family of eight children, none of them old enough to work for a living, would be considered a fool to enlist, and the managers of the Patriotic Fund would have something to say about the absurdity of accepting such men so long as there were still plenty of unmarried men available. Then why criticize the French-Canadian for things we would deprecate in an English-Canadian?

Under a system of national service the French-Canadian farmer, in the vast majority of cases, would be advised by the local tribunal that he could best serve his country by sticking to his work, and doing his utmost to increase production. As a result, he could apply himself to his regular occupation with the feeling of inward satisfaction that comes from doing one's duty, and the stigma that now unfairly rests upon him would be lifted. In the industrial centres, national service would, no doubt, result in large numbers of married men being assigned to munitions work, with satisfaction to themselves and profit to the cause in which we ought all to be laboring. But without national service the figures of comparative enlistments from Ontario and Quebec will be kept working overtime by some people



Scene on the new Toronto-Hamilton Highway near Port Credit. The road has been recently opened for traffic

—Photo by British and Colonial Press.

in an effort to prove that the French-Canadian is a slacker, whereas if the truth were known, the percentage of real slackers among our native born might, perhaps, be shown to be no higher among French-Canadians than English-Canadians.

Only let the French-Canadian get a clear understanding of the difference between conscription and national service, and our prediction is that he will hold up both hands for the latter.

Enemy Indebtedness.

SCARCELY a thought seems to have been given in Canada as yet to a question that for some time has been seriously agitating the minds of business people in England, and that is the safeguarding of British creditors of alien enemies.

The problem is a somewhat complicated one by reason of the fact that there are book debts as well as real and personal property to consider, and the methods that may conveniently be employed for protecting the latter are not applicable, in the opinion of the British Government, to the protection of the former. The whole situation, however, is such an interesting one that an explanation of it will, we believe, be appreciated by Canadians.

The suddenness with which the war broke out naturally resulted in British property in enemy territory and enemy property in British territory being left in the hands of the respective belligerents. In the United Kingdom a public custodian of enemy property was appointed under the "Trading with the Enemy Act," and to him there has been notified or paid over property to the value of £134,000,000. From the information at his disposal, the same official estimates that British property, including debts, in enemy countries, amounts to £90,000,000. The exact amount should soon be definitely ascertainable, because on September 7th last a Royal Proclamation ordered all British subjects in the United Kingdom to make a return of property belonging to them in enemy territories, and of claims by them against enemy subjects and Governments.

In a letter to the Employers' Parliamentary Association, the British Board of Trade, in April, 1915, stated that "it was to be hoped that it would be possible in the Treaty of Peace to provide for the payment of due compensation by the German Government to all persons who could produce proof of having suffered losses by reason of private property being confiscated by the German Government itself, and similarly with regard to debts cancelled by legislative enactment of the German Government."

In May, 1915, Mr. Lloyd George (then Chancellor of the Exchequer) stated in the House of Commons that "with reference to German and other hostile assets which had been secured and earmarked in this country by the Trading with the Enemy Acts, it was the intention of the Government to prevent such assets leaving this country until proper provision was made for securing the corresponding British assets now in the hands of the enemy, and steps would, in due course, be taken to this end."

It may be taken for granted, therefore, that it is the definite intention of the British Government to safeguard the position of its nationals after the war in respect to property, both real and personal, as well as in respect to debts that have been cancelled by legislative enactment.

And, by the way, it may be assumed that Canada could easily be embraced in such an arrangement providing our Government were sufficiently alive to the situation as to cause a return to be made of Canadian property in enemy territory and Canadian claims against enemy subjects or Governments.

Securing the Payment of Book Debts.

SO far, so good. But what about book debts that have not been cancelled by legislative enactments? Now that victory is assured for the Allies—a victory that we know will mean a crushing defeat for the enemy—it is well within the bounds of probability that there will be widespread bankruptcy among the business houses of Germany and Austria when peace is declared. The British Board of Trade, on the advice of the Foreign Office, takes the view that on the restoration of peace, claims by British firms against private individuals or companies in enemy countries for debts due, or for goods detained and not paid for, will revive, and will be recoverable in the usual manner through the ordinary courts of law. According to this, the British creditor, with ordinary trade debts owing to him, would have before him the prospect of little more than a wild goose chase.

The unfairness of this view may be better appreciated when it is remembered on the one hand that the favored few, whose property has been confiscated or whose claims have been cancelled by enemy Governments, will be accorded full protection, and will receive settlement in English currency at par from the security in the hands of the British Government, and on the other hand that the German creditor having claims to recover through the English courts of law, will be able to enter action with hardly any misgivings as to the possibility of finding his debtor a bankrupt.

A victor is surely entitled to the fruits of victory, and if the subjugation of Germany is to be effected as completely as Lloyd George said it would be, in his recent interview dealing with the sporting instincts of the Britisher, it should not be difficult for the Allies to dictate into the terms of peace a clause that would adequately safeguard our business interests against the danger with which they are threatened. The recommendation of the Employers' Parliamentary Association seems to be both simple and effective. It is that "in respect of simple trade debts the Government should at once devise machinery whereby, on the cessation of hostilities, the British Government should be in a position to investigate all claims of British traders and, if satisfied as to their validity, discharge the debt, full opportunity being given to the alien enemies to contest the claim in the British courts, the British Government being fully indemnified by the enemy Governments on behalf of the sums so expended."

Canadian business houses must have claims against Germany that in the aggregate would run into fairly large figures; Canadian insurance companies certainly have large unpaid balances at their credit with German reinsurance concerns that are, or will be, bankrupt as a result of the war. If the Canadian Government has not yet done anything in such matters, it is time it got busy!



Another view along the route of the new Toronto-Hamilton Highway

—Photo by British and Colonial Press.

Freight Car Shortages.

THE annual shortage of cars is now about due. The moving of the crops, both in Canada and in the United States, works the railways up to their peak load, and consequently subjects their equipment to a severe strain. The Monthly Bulletin of the Committee on Relations between Railways of the America Railways Association for September 1st showed a net shortage of 14,281 cars, the largest ever reported on that date. The October Bulletin is not yet available, but no doubt it will report a situation considerably worse.

At this late date, the number of cars cannot be suddenly increased. In justice to the railways it

would hardly be fair to ask them to provide more cars, for it will probably be found that they have sufficient equipment for the traffic moving under normal conditions. The problem to be solved by all concerned is to make the most and best use of the equipment available.

A great deal could be accomplished by the railways themselves in eliminating the delays by which shipments are so frequently attended. With the incentive before them it may be taken for granted that they will at least make progress in that direction. But the shippers, who are even more vitally concerned, can do as much, if not more, to prevent car shortages, if they will see that the cars shipped by or consigned to them are loaded or unloaded quickly, and that car space is conserved by loading to capacity wherever possible.

No shipper can afford to be selfish or inconsiderate in such matters. Every car that is held for an unnecessary length of time, whether for storage purposes or as a result of carelessness, simply means so much potential car space that for the time being is withdrawn from service. As a consequence, some other shipper has to suffer, just as the shipper who detains a car will himself have to suffer from the selfishness or lack of consideration displayed by others.

The embargoes to which the public have had to submit this past year, and which in so many cases have been disastrous to business, might all have been prevented if shippers made it a uniform practice to load and release cars promptly, and if they had also made it a rule, where it was commercially practicable to do so, to load to their full capacity cars containing low-grade commodities that move in bulk, such as cement, stone and grain, for it must not be forgotten that, as the load of the car increases, the number of cars required decreases, and according as the number of cars employed decreases, the less is the danger of congestion in terminals.

It is largely in the hands of the shippers themselves whether they secure relief from the impending danger or not. Let each one do his share, in the directions here indicated, and a tie-up will be obviated, but if carelessness and selfishness continue to hold sway, the movement of freight this fall and winter will be plunged into chaos as sure as fate.

Control of Insurance Rates.

JUST because some political opponents of Sir Adam Beck tried to belittle the waterworks system he installed for the city of London, on the ground that it had not had the effect he promised it would have on insurance rates, the Canadian Fire Underwriters' Association is now under investigation in Ontario by a Commission, consisting of Judge Masten, and all sorts of wild rumors are in circulation that an attempt may be made to dissolve it.

The C. F. U. A. is probably well able to take care of itself. It is not altogether a philanthropic institution, and at times the insuring public may think it arbitrary and autocratic, but nevertheless the C. F. U. A. has done a great deal towards placing insurance ratings on a scientific basis, and while the truth of this statement may not be generally accepted, we know it to be a fact that the operations of the C. F. U. A. have resulted in cheaper insurance through co-operation on the part of its members in reducing their expenses.

Presumably the object of this investigation is to enable the public to purchase insurance at a lower cost, but it is likely to prove a boomerang if it results in the initiation of any policy to control rates. The way things are at present, the insured is always protected by the safety valve of competition. If the rate of the tariff companies is considered too high, recourse can be had to the non-tariff companies, who are usually ready to underbid the Board rate. If licensed companies refuse to quote a satisfactory rate, or are unable to give sufficient cover, the market of the unlicensed companies is always available. Business men have a vital interest in seeing that nothing is done to interfere with the effectiveness of that competition.

But if rates are to be controlled in any way, if the law is to be laid down to licensed companies that, with respect to a certain class of risk, "thus much may you charge, and no more," there is certain to be trouble all around. Insurance companies may, perhaps, be restrained from discriminating unfairly between risks in the same general class, and of similar construction, occupation and exposure, but insurance companies cannot be compelled to carry any risk they don't want to carry, and they won't want to carry an individual risk, or a class of risk, at a rate which their experience has shown them to be unprofitable. Now the returns filed with the Superintendent of Insurance will show that for the past thirty years the companies have not averaged more than six per cent. profit on their Canadian business. If, with a free hand, they are not able to do better than that for themselves, it is reasonable to assume that under a system of rate control their profits would be even less. The question, therefore, for buyers of insurance to ask themselves is, "Can we afford to see competition lessened by the withdrawal of any of the licensed companies from the field? Can we afford to invite a situation where none of the licensed companies will give us a cover?"

In theory, rate control may look all right, but in practice it may prove to be all wrong, as some of the States across the border have found out to their sorrow.

A Tempest in a Tea-Pot.

IF insurance rates are too high in Canada (and a comparison with the rates at which risks in England are carried forces one to the conclusion that they are) the remedy is to be found not in exercising a control of rates, but in removing the cause that forces the companies to charge so much.

Roughly speaking, the money collected by insurance companies in the form of premiums is expended in the

following proportions:—(*a*) Administration expenses, including salaries, agents' commissions, rent, taxes, etc., 35 per cent.; (*b*) Losses sustained under policies issued, 59 per cent.; (*c*) Dividends to shareholders, 6 per cent. For the Government, through a Commission, to busy itself in trying to prune down a 35 per cent. item, which the companies themselves have every incentive to keep at the lowest possible figure, while there is a controllable item of 59 per cent. staring it in the face, is like straining at a gnat and swallowing a camel.

One would have thought that the problem of reducing the annual fire waste of Ontario would have been of sufficient importance, and would have involved duties sufficiently arduous, to have commanded the entire time and attention of the Fire Marshal for some years to come. That, at any rate, was the expectation of the business interests that advocated the creation of the office, and their beliefs as to its possibilities for usefulness were certainly shared by the Government. But the office seat of the Government's appointee is barely warm before his all-important duties are temporarily laid aside, so that he can sharpen the axe with which he hopes to get after the C. F. U. A. Were the C. F. U. A. all that the Fire Marshal tries to make it out to be, anything he might accomplish in the direction of securing for the insured cheaper rates and more satisfactory service by putting the underwriters under control would be a mere bagatelle compared with the advantage the insured would immediately derive from cutting a few million dollars off our annual bill for fire waste.

Insurance Commissioner Dunbar, of Tennessee, hits the nail on the head when, in a paper on this subject, he says:—

"In Europe schedules and rate-making are not even discussed outside the insurance fraternity. This for the reason that rates are so low that they are negligible, and the reason their rates are low is because their losses are small. The reason their losses are so small is because they have legislated against fires instead of legislating against fire companies. We have been so busy regulating the insurance business we have not had time to regulate the fire waste. They have directed their attention to the suppression of fires; we have spent our time discussing mere manifestations of a vital, economic problem, and instead of dealing with fundamentals we experiment with legislation that operates not at all upon the cause, but only upon the manner of distributing an appalling waste. Their laws fix the doctrine of personal responsibility, and we pass valued policy laws which encourage arson and reward the dishonest at the expense of the honest. They have building laws strictly enforced. Few of our States have such laws, and where they have been adopted in our cities they are frequently disregarded or suspended in the interest of individuals. Our fire waste is largely a matter of mental attitude."

Lloyd George's Tribute

BRITAIN'S new Minister for War, The Right Honorable David Lloyd George, marked his first public appearance since his appointment by some remarks which Canadians will cherish, and of which Canada may be justly proud: "I am here to thank Canada," he said, "for her contribution in this war. Brilliant descriptions of the Battle of Ypres, when you saved Calais, will he read for many a long day in Britain's gratitude. Just as the Rocky Mountains hurl back the storms of the West, so did those heroes of Ypres break the hurricane of German fury. They upheld the high honor of Canada, and saved the British army. You have the gratitude as well as the admiration of every man, woman and child in these islands. It is a struggle for freedom, but in the struggle we are a federation—this great Empire—for an even greater Empire in the future."

How did our soldiers accomplish those undying achievements? By leadership, by discipline, and by organization. How will their work be augmented by preparedness at home? For us, the longer the war lasts, the more necessary it is to get ready for what will follow. Business men in very large proportion undoubtedly prefer to wait and see. And their excuse for this unadmirable passivity is that until they know the intentions of the Government they are helpless. Let leaders of industry not put their trust in the State! The State can teach them nothing. They can teach the State much. It is for them rather to help the State in such emergencies as now exist. It was not the State that developed our farms and built our cities, or filled them with homes as they are now. It was the men of Canada themselves who took the work in hand, and on a barren and unpromising foundation have raised such a structure of industry and of buildings and of inhabitants, as we see around us. Let our captains of industry further recognize the interests of our fighting men. For them in particular the manufacturer should regard himself as a trustee. Therefore, the first answer to those who cry: "Tell us what to do!" is that they should convert themselves from a mob into an army. Go-as-you-please individualism will no more succeed in the economic war than on the military battlefield. It remains for the men in industrial and commercial life to take the matter up with a degree of energy which will bring about results.

The Soldier and the Soil

THE Senate of Canada has appointed a special Committee on Agricultural, Industrial and Trade Development, mainly to help the Economic and Development Commission appointed by the Government in October, 1915. The object is to enquire as to the development and utilization of our natural resources generally, and to make an appeal to all organized bodies for their best co-operation in the matter.

It is premised that "the readjustment in this country will be best found in the development and in the improve-

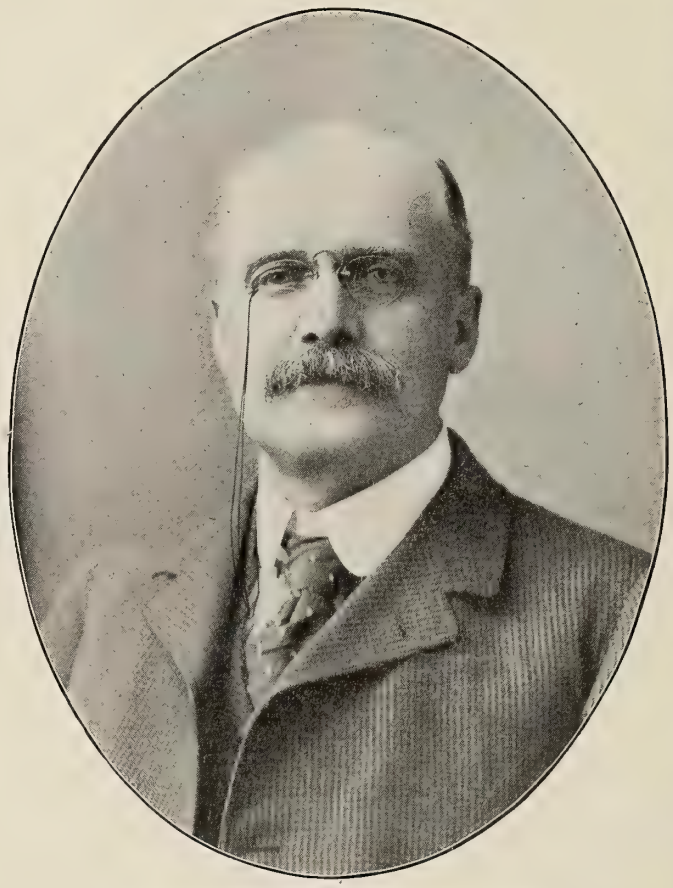
ment of agriculture, in the fostering of homogeneous industry, and in the expansion of our trade." The development of our agricultural resources being dependent upon an increase of population, it becomes imperative to find a means of attracting the proper class of immigrants, and as many of them as possible. With peace, also, great avenues of trade will be opened within the Empire and with the Allies and neutral countries. Let us prepare to take our fair share, and thereby find permanent employment for the capital and labor which is at present engaged in the manufacture of munitions of war. We must also be prepared for the transfer at the end of the war of the energies of the country from the military to the economic field. These are vital issues for our leaders of industry, and doubtless will receive that prompt and serious consideration which the Senate of Canada desiderates. Let us bear in mind that joint and common action now may be the means of avoiding a trade depression at the end of the war and of laying the best foundation for the future prosperity of the Dominion.

The Toronto Branch of the Canadian Manufacturers Association have already had this important question under careful consideration, and have appointed a strong committee of their number to consider more especially the question of land settlement after the war. It is felt that the Government should be encouraged in any feasible scheme of land development in Northern Ontario. Consideration is being given at the present time to the question of arranging for free farms for the veterans of the war, and the motive behind this movement is true and noble, but, viewed from the side of a practical farmer, it presents many and grave difficulties. How many of those who receive the free land will care to till the soil? Many will not desire the rural life. Others will choose their own work and will dispose of the land at the earliest opportunity.

Some scheme to train those who have little or no experience in agriculture but who honestly wish and are able to farm, should be of infinite help to many men. Other plans to assist each returning soldier to whatever line he feels best suited for will save many a disappointment, and will of the greatest service to the individual. It is impossible to instil in a moment a love of farming in the heart of a man who has spent his life in a factory or warehouse. We must never forget that farmers—like poets—must be born, and not made by any instantaneous process.

Attractions must therefore be offered to desirable settlers if they are to be retained on the land. The Government itself should clear the land. This would no doubt require capital, which, however, would be returned to the Government in time. The toil and waiting accompanying the development of wild land are such as to tax the strength and endurance of most men, however industrious, before the land can be made productive, even if the settler had the means of maintaining himself and his family in the meantime. The land thus cleared would be given out in allotments to suitable men upon such terms as would practically secure the success of their efforts and at the same time yield a fair return to the Government on its capital outlay. To these initial difficulties are no doubt due the fact that very large areas of land for which homesteaders have already secured patents are not under cultivation.

The same questions are receiving serious consideration on the part of statesmen in Great Britain, where proposals are advanced for cutting up many of the large estates into allotments, and placing them at the disposal of selected settlers on fair terms which it is anticipated will secure the success of the occupants and at the same time yield an adequate return on the capital expended by the Government, besides materially solving the problem of depleted population.



THE LATE EDWARD GURNEY

President of the Gurney Foundry Co., Limited, and an ex-president of the Canadian Manufacturers Association, whose death occurred last month

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The Late Edward Gurney.

IN the death of Edward Gurney, President of the Gurney Foundry Co., the Association loses another of its honored ex-presidents. The late Mr. Gurney held office nearly forty years ago, when he was a young man in his early thirties, but his interest in the Association's work has never flagged in all the years that have intervened since then. The name of Gurney was, and still is, an outstanding one in the industrial life of the country. Few of our Canadian manufacturers have been better known all through the Dominion than the Gurneys, father and sons,

for three generations. And their fame has rested on sterling worth, not on any peculiarities or idiosyncracies.

Shabby Treatment.

THE Canadian Society of Civil Engineers will meet with very general sympathy from the business public in their protest against the selection of a United States in preference to a Canadian engineer to assist the Smith-Drayton-Paish Commission in investigating the railway situation in this country.

The Government has issued one memorandum and Sir Henry Drayton has issued another, both defending or trying to defend this appointment on the ground that the magnitude and seriousness of the questions which confronted the Government and the Commission made it necessary to secure the very best talent, regardless of where they might have to go for it. In adopting this high-brow, ultra-dignified line of talk, both the Government and Sir Henry forced themselves to assume that nobody in Canada was good enough for them. It was bad enough in all conscience to pass Canadians up without giving them a show, but to turn around afterwards and tell them they were incompetent was a slap in the face that will not soon be forgotten.

Now there was no necessity for any trouble over this matter at all, if the Government had simply been frank enough to tell what probably happened. Mr. Smith, of the New York Central, Chairman of the Commission, feeling the weight of responsibility attaching to him personally, expressed a desire to nominate as Advisory Engineer someone with whom he had been accustomed to work. Sir Henry Drayton was nothing loath to accord Mr. Smith that courtesy. Sir George Paish, the other member, had backed out at the last minute and did not need to be consulted. So Mr. Smith had his way and selected Professor Swain, of Harvard.

Apparently it resolves itself down to this, then, that Sir Henry, rather than admit negligence of any kind in defending Canadian interests, rather than admit he was dominated by the Chairman of the Commission, avails himself of a plausible excuse that only gets him into hotter water because it happens to cast a slur upon Canadian engineers.

Professor Swain may be all right. We have nothing whatever against him. But at a time like this, when every day that passes over our heads gives striking evidence of the fact that Canadian engineers are possessed of a measure of skill and resourcefulness that is commanding the admiration of the ablest military men in Europe, it ill becomes any of us at home to belittle or to cast aspersions upon the members of a noble profession that is emblazoning Canada's name in the pages of history. There is no task to which Canadian engineers are not equal, if they are only given a chance. In some particular branches they may lack experience, but when such experience is to be had, arising out of work which Canada herself has in hand, it should be the first duty of our Government to see that they get it.

What Is the Game?

THE above, however is only by way of prelude to the more significant fact that Sir Henry Drayton may have let some kind of cat out of the bag when he said that the Commissioners had decided to obtain a physical valuation of the various railways, a work that called for a large staff and six months of time.

The Order-in-Council creating the Commission does not specifically require such valuation to be made, though it may be assumed to be permissible if the Commission deem it wise. Of course, if the Government has in contemplation taking over any of our transcontinental railways, or any parts of any of them, it ought to have full information, down to the last detail, about what it is going to buy. But, on the other hand, it is not always for buying or selling purposes that physical valuations are made. Sometimes they are made preparatory to a loan, in order that the party who is advancing the money may be satisfied as to the security.

Now, if the Government has the slightest idea in the back of its head that, by adducing inventories to show an abundance of security, it can postpone the final settlement of our railway problem by giving the Canadian Northern another loan, it had better drop the idea while the dropping is good, for the public simply will not stand for it. Figures can be manipulated to provide the Government with an excuse for anything it wants to do, but the only figures the people of this country will look at are the millions the C.N.R. has already taken out of their pockets and the additional millions they want to get their hands on. And just at present Canada has better use for her money than to apply it towards swelling the private fortunes of a few promoters whose methods of gaining the support of members of Parliament and members of the Government might well be made the subject of judicial investigation.

By way of putting a spoke in the wheel of the physical valuations that are to be made, we would like to enquire whether those valuations are to be predicated on the basis of going concerns, operating or capable of being operated at a profit, or on the basis of bankrupt concerns whose assets represent only so much scrap. A going concern has a right to value its assets on their replacement cost, but a bankrupt concern, the continued operation of which would only result in loss upon loss, cannot properly value its assets at anything higher than the price they would bring under the hammer, or if offered in parcels as second-hand material.

If Canada, in her own interest, deems it wise or necessary to take over any of our transcontinental lines, she ought to be able to acquire them as advantageously as any private business firm could acquire the assets of any other private business firm that had gotten itself into difficulties. Similarly, if Canada is asked for any further loans by railway companies whose affairs are admittedly in a precarious condition, she would be foolish to consider as security anything more than the scrap valuation of their assets.

The report of the Commission will bear watching.

THE RECENT INCREASE OF INDUSTRIAL WORKING CAPITAL

By H. M. P. ECKARDT

(Specially prepared for "Industrial Canada")

THE announcement made in Montreal the other day by President Workman, of the Dominion Steel Corporation, to the effect that his company intends to pay off in cash on December 1st, 1916, the £700,000 of six per cent. notes maturing on December 1st, 1918, comes as another striking illustration of the manner in which the representative Canadian industrial concerns are utilizing the exceptional profits thrown in their way by the war. Mr. Workman is quoted as saying that the debt to the banks having been already liquidated, the balance of cash will accumulate by the beginning of December to proportions sufficient to allow of payment of the five-year notes above mentioned which represent the last of the Corporation's short-term obligations. With reference to the notes in question, it may be said incidentally, that the Dominion Securities Corporation offered to Canadian investors in June this year, a batch of them, amounting to £25,000, evidently transferred from the English market, at 98.86, yielding 6½ per cent.

Lake of the Woods Example.

A short time previously, Lake of the Woods Milling Company announced the retirement of $750,000 of maturing bonds which it had guaranteed for a subsidiary company. In this latter case it is not clear as yet to what extent the payments on the bonds were made out of current profits. However, the 1915 annual report of the company showed a surplus of about $1,400.000 in current assets over current liabilities, and it would be an easy matter to make temporary financial arrangements for such portion of the bond payment as was not covered by the surplus profits of the year.

These are two outstanding recent instances of industrial debt reduction incidental to the prevailing prosperity. Possibly in the second case the surplus of quick assets would be cut down to a certain extent by the retirement of bonds, but ample working capital remains, and the company experiences relief from the annual bond interest. In the case of the Dominion Steel Corporation, if the £700,000 of five-year notes be reckoned as floating debt, the working capital is certainly increased to a marked extent through their retirement out of profits.

On a smaller scale the same policy of strengthening working capital, through liquidation of floating debt or accumulation of liquid resources, has been put into force by numerous other manufacturing concerns in this country; and the cumulative effect must be to put Canadian industry in general on a sounder, stronger financial basis.

Were Cramped for Capital.

It is well known that in past years many Canadian manufacturers have been cramped for want of working capital. This disability interfered annoyingly with their operations. Opportunities would present themselves of acquiring raw materials, or perhaps machinery, etc., on very advantageous terms; but it frequently happened that they could not be grasped, because the bank loans were abnormally large and the manufacturer was reluctant to ask his banker for more money. So transactions promising good profits were allowed to pass. In numerous other ways scantiness of working capital has impaired efficiency and caused considerable worry.

Thus is explained the general satisfaction that is felt in expert financial circles over the fact that industrial managers, blest with large profits, have elected as a rule, to utilize the unexpected good fortune, to strengthen their financial underpinning, rather than to squander an undue proportion of the extra income in the form of fancy dividends and bonuses. In many instances the manufacturer's relations with his bankers have completely changed. As the unusually large profits flow in, the first results are seen in connection with the bank credits. Following the swelling of the credit balance in current account, the special bank loans against raw material, or for new machinery begin to come down, notwithstanding occasional large, new purchases. Soon, perhaps, the accumulation of profits results in reducing loans to very small figures, or they may be entirely wiped out, permitting the manufacturer to finance himself altogether by means of discounting his bills receivable. Some of the strong concerns had been accustomed in the past to finance in this way, through discounting trade paper, and without recourse to accommodation loans. A surfeit of profits in such cases would, perhaps, enable the manufacturer to place the bulk of the receivables with the bank merely for collection—there being nothing gained through discounting the bills only to swell the already plethoric credit balance in current account. In these undiscounted receivables the manufacturer has an excellent reserve which can be realized any time through giving the bank instructions to discount.

Reserve of Borrowing Power.

Sometimes, where the companies have vastly enlarged their activities, the accumulation of profits is seen in the growth of the inventories or other items of the current assets, current liabilities being not reduced. If the additional goods or assets are really salable, the development constitutes an addition to the working capital as surely as if it had taken the other form of cancellation of indebtedness. Against his loans to a manufacturer in such circumstances the banker has in sight security or goods far exceeding his requirements; and as he stands ready to increase his advances at any time, the reserve of borrowing power is there, and the manufacturer can use it when a suitable opportunity presents itself.

This is the way the profits are disposed of during the course of the year. They go into the current account, then into payment of loans and discounts, or into purchases of new goods. Possibly, if they are very large and the company's position very strong financially, the directors may authorize the distribution of an increased or special dividend. As the end of the fiscal year approaches, the matter of appropriations for depreciation and other reserves comes up for discussion at the board meetings. These, of course, are mere book entries, but they, nevertheless, exert an important influence on the destinies of the company. The profits have been earned and received during the course of the year. They have temporarily gone to strengthen the working capital. The effect of large appropriations for depreciation, contingencies, etc., is to definitely retain the amounts so disposed in the working capital, and to increase the assurance that the company's finances will be kept on a solid basis.

When the funds are removed from the profit and loss account the temptation to distribute them in dividends or bonuses disappears.

On the other hand, when it is decided to distribute an increased dividend or a bonus, the amount comes out of the working capital. It is, perhaps, provided through discounting paper at the bank or through drawing on the current assets in some form. Thus the reserve of borrowing power may be used to a certain extent. However, in view of the uncertainty surrounding the industrial future and the necessity of writing off expenditures on special machinery, the executives, as mentioned above, have been very conservative in this matter of distributing profits among the proprietors. With reference to the special equipment of machinery for munition making, one authority says that probably fifty per cent. of it will require to be scrapped when the war orders cease to come forward. It is also the case that some of the new buildings and additions will be practically valueless when the munition contracts are completed. So there are necessitated large appropriations for wiping out these expenditures. Although a number of the larger companies which undertook the war contracts at an early stage are said to have entirely cleaned up their initial special expenditures, there are many others which have not yet recovered the capital outlay. Another year of profitable work would, probably place most of the concerns in the desired position.

The Manufacturer and his Banker.

The benefits of the policy of conserving profits and building up working capital to imposing dimensions, will be experienced when the period of post-bellum readjustment is reached. As already mentioned, the various industrial concerns will be more independent of the banks. They will be able to confine their demands to what the bankers are quite willing and ready to grant. In the past, when working capital was conspicuously deficient, the manufacturer has been compelled time and again to ask the bank to put through transactions that conflicted with time-honored principles, and traditions. A succession of such requests invariably cause irritation and friction all along the line. Not only that, but the chronically spread-out position of the manufacturer seriously endangered himself and his bank. Relations between the two parties should now be much more congenial and satisfactory. It is safe enough to say that with the strengthening of the industrial finances, the banks will be disposed to shade their rates of discount, etc., more finely; and there may be a keener competition for the factory accounts.

Another gain is seen in the saving of interest. When a concern is running too close to the wind as regards working capital, the deduction from net earnings for interest on loans and advances are often heartbreakingly large. Frequently what the proprietors save in interest charges would represent a very satisfactory return on the new capital required to cancel the abnormal debt. When extraordinary boom-time profits are applied in this way—to extinguish floating and short date debts—it may mean, in addition to placing the company in comfortable circumstances, an addition of two, three, or more per cent. to the amount available every year for dividends. For example, supposing a company with capital of $1,800,000 salts down $600,000 in two years of abnormal prosperity, the amount being applied to reduce floating debt subject to 6 per cent. interest. The effect would be to save $36,000 per year in interest; and, general conditions being satisfactory, it would be quite safe and conservative to increase the regular or permanent dividend rate by two per cent. annually. Possibly the increased efficiency resulting from the material strengthening of working capital would result in a further increase of so much per cent. in the ordinary earning capacity.

Such increase of dividend would probably cause the discriminating investment public to value the company's stock more highly than would be the case if a large part of the extra profits were distributed in the form of a bonus, again reducing the surplus of quick assets to somewhere near the danger line. Again it is clear that the building up of cash resources must have a good effect in insuring the various industrial concerns against the chances of disaster arising out of the accidents or untoward developments of future years. The policy, in other words, tends to substantially increase their stability.

BOILER TUBES AND SCALE

Eminent authorities agree that a layer of scale one-tenth of an inch thick, and a steel boiler plate ten inches thick, offer exactly the same resistance to the passage of heat. Putting it more vividly, boiler scale offers about 100 times the resistance that a steel plate does to heat, thickness being equal. Is it a wonder, then, that, after a thorough cleaning of boiler tubes, many power users find they can generate exactly the same volume of steam with one, two and even three boilers less? The amazing thing to us is that so many engineers are still willing to allow that scale to accumulate to thickness ranging from one-eighth inch to one-half inch before taking steps to remove it. The fuel waste will range from 10 per cent. to as high as 50 per cent., the danger to the people connected with the plant will be great, and the life of the tubes shortened fully 50 per cent.—*The Dodge Idea.*

AUSTRALIA'S CARGO STEAMERS.

D. H. Ross, Canadian Trade Commissioner to Australia, reports that at the end of June the Commonwealth Government announced that, owing to the difficulty of obtaining tonnage and to the fact that the rates of freight between Australia and Europe threatened to become more acute, fifteen serviceable cargo steamers, with an average carrying capacity of 8,000 tons, had been purchased. The fifteen steamers aggregate 65,245 tons gross and 41,868 tons net register. Eleven of the steamers are classed 100 A1 at Lloyds, and the majority were built in 1906 and 1907. Two were built in 1909, and one each in 1912 and 1913. The cost of the steamers has not yet been disclosed, but the amount is understood to be in the vicinity of £2,000,000, which is equivalent to nearly £30 per ton on the total gross tonnage. It is admitted that high prices have been paid, but shipping activities are so abnormal that justification of the purchase will probably be furnished by large earnings from high rates of freight within a comparatively brief period.

From expert calculation, it is anticipated that within two years the earnings should be sufficient to provide not only for working expenses, repairs, insurance and interest on capital, but also an additional balance of from £1,500,000 to £1,750,000 for depreciation. The steamers have been purchased primarily, with the object of conveying to the world's markets the immense quantity of Australian wheat—1915-16 harvest—now stacked waiting transportation at the principal shipping ports throughout the Commonwealth. It may be observed that the purchase of the steamers is in conformity with the pre-election policy outlined by the present Administration to establish steamship services oversea as well as within Commonwealth waters.

For a number of years the acquirement of ocean services has been advocated to a considerable extent by politicians of all parties as the concomitant of state-owned railway systems throughout Australia.

THE PENALTY OF BEING PROGRESSIVE

How Some Manufacturers have lost Business because they run Up-to-Date Plants

By HERBERT NORCROSS

DOES it pay to have an up-to-date plant, equipped with all the latest safety devices, well-lighted, well-ventilated, clean and sanitary? At first glance it surely looks as if it does, but then,—isn't it true that manufacturers who have been priding themselves on running just such plants have found government orders slipping past them into the hands of concerns whose establishments have been sadly lacking in all that goes towards making them clean, safe and sanitary? They have completely and absolutely been penalized because they were trying to operate their plants on modern lines.

It is about time that there was a little more consistency in the views of those well-meaning but illogical folk, who on the one hand are inveighing against the allegedly deplorable conditions under which so many wage-earners are supposed to labor, and on the other are complaining about the increased cost of numerous manufactured articles. If they sincerely wish to have the worker spend his hours of labor amid pleasant and healthy surroundings, they will have to concede that it costs money to equip and operate a factory under such desirable conditions. Increased overhead charges are at once imposed on the industry and these must be met in whole or in part by raising the price of the finished product.

Speaking generally, Canadians want to see their factories made as efficient as possible. They are anxious to have the working classes perform their day's work in safe, healthy and attractive surroundings. And yet, in spite of this, large contracts, especially those for military uniforms, great coats and shirts, have been passed over in certain cases to manufacturers who have made little or no pretence to care for the well-being of their workpeople. It was presumably a case of price. The manufacturer with the sanitary plant could not afford to meet the competition of the manufacturer with the cheap plant, and lost the business. No allowance was made for the diverse character of the two establishments; no consideration was given to the fact that the one was taking care of its employees and the other was not.



Scene in a Canadian clothing factory, where little attention has been paid to fire risks, cleanliness and sanitation



Another factory where working conditions are infinitely better—good light, fresh air, clean floors and first-class fire protection

Generally speaking the garment-making industry in Canadian cities is being carried on under conditions which reflect credit upon the proprietors of the various clothing factories. Many employers have spent large sums of money to bring their factories not only up to the requirements of the Factory Act, but even beyond those requirements and most employees work under conditions that are better, so far as health and cleanliness are concerned, than prevail in their own homes. At the same time there are a number of establishments which fall below the standard and which will require considerable jacking-up to bring them up to the level on which they should be operated.

For instance, there are plants where men



Contrast this four-foot passage and inward-opening doors—a menace to the lives of 150 women and men in case of fire—

and women are crowded together in close, ill-ventilated rooms; where cuttings are piled inches deep on the floor and swept up not oftener than once a month; where the bundles of clothing, finished and unfinished are strewn over the floor to be walked on as the workers pass to and fro; and where the male employees smoke and expectorate without let or hindrance. It seems scarcely credible that there can be such establishments in these enlightened days and yet they exist, and it is their proprietors, often enough, who have been profiting at the expense of the law-observing and law-abiding manufacturers.

There are also serious fire-hazards,—in many cases a complete lack of safeguards,—which add to the seriousness of the situation. One illustration on this page shows the only exit from a factory building in which 150 men and women work. The passage is only four feet wide and the doors open inward. What would happen in the event of a rush for this narrow opening by a panic-stricken mob of workpeople. Yet the business comes to these establishments, while firms with admirable fire-proof exits like that shown in the opposite illustration, lose out in the competition.

Factory inspectors are making regular rounds. Factory laws are most explicit. Why cannot there be a stricter enforcement of the regulations, which will obliterate these menaces? If only the law had been more equably enforced, perhaps there might have been no occasion to point out how some firms are being penalized because they have made their plants clean and safe.



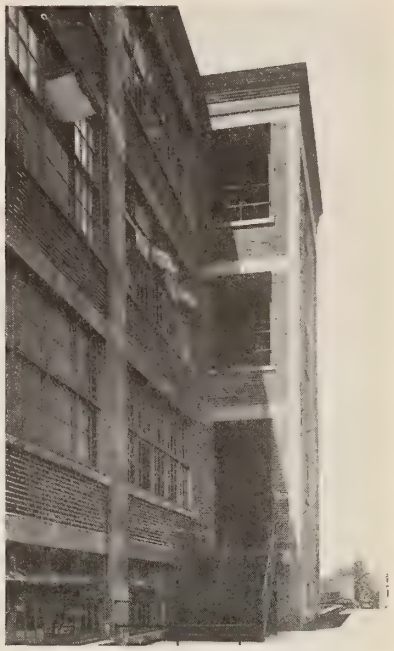
A dangerous fire hazard right in the heart of a factory district; there are no fire escapes on the building in the background.

THE SWIFT PENSION PLAN.

Some Details of the Generous Arrangement for the Care of Employees, Made by Swift & Co.

The well-known firm of Swift & Company have announced a pension plan for all their employees, which became effective August 1, states the *Labor Gazette*. It is estimated that there are more than 2,000 employees of the company at its various branches in Canada, over 800 of these being in Toronto, in addition to those in the United States. To inaugurate the plan the company has created a fund of $2,000,000 and may make additional contributions from time to time. The employees do not contribute. The fund is administered by a Board consisting of five members, officers or employees of the company. No pension is to be less than $240 a year and not more than $5,000 a year.

Male employees who have been in the company's employ for 25 years or longer and have attained the age of 60 years, and women who have been employed by the company for 25 years and have attained the age of 50 years, may, in the discretion of the Board be pensioned. Male employees who have served 25 years or longer and have reached the age of 65, and women who have served 25 years or longer and reached the age of 55, are entitled to pensions under the plan. Disabled employees who have been in the service of the company continuously for 15 years or longer may also be pensioned. Employees who were 40 years of age at the time of entering the company's service are not eligible for pensions.



With this exit, where smoke-proof stairs, cut off by fire doors, provide a safe escape in case of danger.

The pensions of those retired on account of age and long service, and of those after service of 25 years, but prior to the age of retirement, will be one-half of the average salary for the five years preceding retirement; the pension of those retiring on account of incapacity after from 15 to 25 years of service will be computed on a basis of one and one-half per cent. of the average salary for the five-year period preceding retirement for each year of continuous service. The widow and children of a pensioned employee will receive one-half of the pension to which such employee was entitled at the time of his death, and pensions may be paid to the widow or dependents of an employee whose death occurred after he had been 15 years or more in the employ of the company.

The establishment of the pension plan, it is stated, is intended only to declare the present policy of the company and to give authority to their officers to carry out such policy and is not to be held to create a contract or to give employees a right to be retained in the service or any right to any pension allowance.

KEEPING THE HUMAN MACHINE FIT

How Some Large Industries Look After the Physical Welfare of their Employees

By DR. DAVID F. ARMSTRONG

(*Reproduced from The Dodge Idea.*)

PERHAPS the first step in the perfection of the human machine is the physical examination. What is its object? Reduced to its simplest terms, it is to determine in a fair and impartial manner the fitness of an applicant to engage in any labor with safety to himself, his fellow workmen, and to his employer. There is nothing greedy, nothing selfish, nothing arbitrary in physical examination.

In the industrial world the unknown factor is the man himself. The man who has to "feel" his way, because of defective eyesight is not the one to stand at the furnace; nor later to pour the iron into the mould. Uncertain vision in a moulder is a liability, not an asset. A damaged eye cannot be measured in dollars and cents.

The International Harvester Company physical examination consists of a careful inspection of the eyes, ears, nose and throat; inspection and palpitation of the glands of the neck, including the thyroid; the usual chest examination of lungs and heart. The abdomen is inspected and palpitated for tumors and enlarged organs. Hernia, varicocele, hydrocele, hemorrhoids, varicose veins and flat foot are discovered if present.

Whenever physical defects in an employee are discovered, whether in the first, or some subsequent examination, such defects are recorded. At intervals of from one to twelve months (depending upon the nature of the defect) these employees are re-examined and advised as to future treatment and care of their defects.

Advantages of Examination

The advantages of any early physical examination of employees are threefold; first, to the applicant himself, second, to the employers, and third to the applicant's fellow-workers.

The applicant benefits in that perhaps for the first time in his life he is given a thorough physical examination by a competent physician. He is gratified when told he is physically sound. He is benefited when told that he has a physical defect and advised as to future care. Ofttimes serious results are warded off through advice given by the examiner. Slight defects of the eye, ear, nose, throat, chest, etc., come to naught if a remedy is applied in time. The applicant is in a position to protect his family when he learns that he has a contagious skin disease or other malady. He profits in being put at such work as will least tend to develop his weakness.

The employer profits in securing many physically sound employees and by knowing the defects of others. The value of such knowledge is far-reaching. Strong, able-bodied men can safely and profitably be given jobs that require great strength and endurance, whereas to place an employee with a defective heart or hernia at such laborious work would result in loss.

The rank and file of employees are protected in that applicants for work are turned away when found to have any disease regarded as contagious.

Subsequent examinations are advantageous in that they keep both employee and employer in close touch with the human machine upon which success depends.

The man with dilated vessels and a dizzy head may be no great risk to his fellow-workers, but he is a poor asset for his employer and a grave risk to himself.

The man with a damaged lung, who scatters his sputum broadcast, may help to fill the hospitals, but he does not help his employer to produce.

In a broader sense, the physical examination goes farther. It aims to prevent the introduction of infection from without; and to prevent its spread within the works. I recall an epidemic which occurred in Auburn, N.Y., some years ago and the fear of its gaining a foothold in the I. H. C. factory there. By constantly watching suspected cases, and by fumigation of the different departments, our vigilance and efforts were rewarded in our having few cases and practically no disturbance in the running of the works. That epidemics do occur and cause serious disturbance to the community at large, and to manufacturers in particular, I need only to mention the severe outbreak of tracoma in a neighboring state some few years ago.

Inception of the Idea

The physical examination by the employer had its inception in the life insurance examination. The compensation laws and safety-first movement have developed it from a one horsepower affair into a twelve cylindered, smooth running machine.

What does the medical examiner learn from the examination? He stands as the censor to separate the true from the false, the wheat from the chaff; to uncover defects and suggest a remedy. He quickly learns that concealed defects frequently manifest themselves by outward nervousness and a quickening of the pulse rate. He learns that heredity plays a big part in the human race. I recall the case of one of our members who gave a family history entirely at variance with the facts. He became insane, was examined by a commission and later committed to one of our state institutions. From that institution we learned that his father and brother had been there before him. "Murder will out."

Two new systems are to be grafted into the hospital system of the Fairbanks-Morse Manufacturing Company in the near future.

Innovations in System

Eye examinations of all applicants for employment are to be made. This will be done for the benefit of the employees themselves, so that the person with slightly defective sight will be placed at a job in which there is no danger to him because of his defective sight. Apparatus for such tests already is on the ground. The examinations, which are simple and like those applied to school children, will be made by Mrs. Rasmussen, the nurse of the plant.

The second innovation is a regulation of all redressings which are done in the hospital. At present the nurse makes more than 200 redressings a month. A ticket system is to be introduced so that every man needing a redressing of a wound will have a certain time to call at the hospital.

Any injury at the Fairbanks-Morse plant, be it a dust-speck in the eye, a sliver in the finger or a broken wrist or deep laceration in the leg, is given first aid and possibly further treatment in a model hospital room maintained by the company in the basement of its office building. Mrs. M. C. Rasmussen, a nurse with ten years of practical experience is in charge.

In this room are the following accessories: Bed, operating table, two instrument stands, examination chair, sterilizing outfit, three chairs, two medicine cases, hot and cold water sink and minor accessories. The room is about 15 by 18 feet

in size. It and all the furniture in it is enamel—and kept—white. Its floor is tiled.

Varying from the slightest accidents to those so serious that a physician must be called after first aid is administered, Mrs. Rasmussen gives first aid to 400 patients a month. By far the greater number of injuries are slight hand and finger injuries and small particles in the eyes.

The hospital first aid is for the benefit of the employees. "No accident is too small for treatment," is the motto the men are taught and so they come to the hospital with even the slightest hurts. In this way infection is prevented in numberless cases and injuries which might become dangerous are arrested in their incipiency.

The hospital saves the men much time for their work which otherwise might be spent in hospitals or at home. They are not "docked" for the time they spend getting the treatment. It saves the company money, also, for the total of time lost from way troops' movements.

Not only injuries but illness is cared for in the hospital. If a man is overcome by gas, if he becomes faint while at his work, he is brought to the hospital and put to bed and allowed to remain there for several hours, or until he is quite recovered.

A record of each case is kept. The cards are filed according to the department in which the cases arise and each department is charged with the expense of its cases.

AUSTRALIAN TRADE COMMISSION.

In a report to the Department of Trade and Commerce, D. H. Ross, the Dominion Trade Commissioner to Australia, states that it has been decided by the Commonwealth Government to appoint a commission to visit Canada and the United States to investigate and report upon overseas methods of manufacture and production and the conditions of employment therein.

The commission will probably consist of six representatives of the manufacturers in Australia, one from each state, together with six representatives of the workers, one also from each state. The chamber of manufacturers in each capital city, and the central labour organization in each state, are asked to submit three nominations from which a selection will be made by the Commonwealth Government. Manufacturers' representatives will be men having special and expert knowledge of the industries to be reported upon. The industries to be investigated by the commission are:—

(*a*) Iron, engineering and allied trades.
(*b*) Timber, building material.
(*c*) Leather.
(*d*) Textiles.
(*e*) Paper.
(*f*) Trades in the preparation of foodstuffs.

The same principle will apply to the selection of the representatives of the labour organizations.

Each section of the commission will furnish a report on the industry it represents, separate reports being furnished by the representatives of the manufacturers and the representatives of the workers.

A secretary will be appointed, and the commission will also be accompanied by a journalist chosen by the Government from three nominations to be made by the Australian Journalists' Association. The commission is expected to return in about six months from the date of departure from Australia. The main object of the Commission's tour is to secure an insight into manufacturing methods in North America, and to study the relations existing between employers and employees.

VALUE OF SHOWER BATH

When an athlete finishes exercising, or after competing in an athletic event, the first thing he does is take a shower and a rub down. He finds it necessary for his well being. And what is necessary to keep an athlete in good trim is required, even to a greater degree, to keep up the physical condition of the average workman.

The athlete works for a comparatively short time; the workman is at his task at least eight hours steady. Imagine what a shower, a rub down and a change of clothes will do for him. In some plants that the writer has visited shower baths are maintained as part of the working equipment, and there is a more elastic step, brighter eyes and increased energy among the employees than where they are not used. The worker cannot help but feel better and he is less liable to stop at the first place out to imbibe something to give him the false feeling of strength and purpose he will get from a bath. The shower is a good investment in any factory.—*The Dodge Idea.*

TAKE A VACATION AND LIVE LONGER.

The mechanism of the human body is like a fine machine, writes Dr. Ross Huston, in the *Manufacturers' News.* It goes smoothly when properly cared for, and gives trouble when neglected. The man who has taken advantage of the opportunities during his life has not neglected this machine. He has watched it carefully. At the age of fifty he looks thirty-five or forty. He has been regular in his living—has mixed enough recreation and play with his work to balance his nervous and physical energies and has kept in good health. He has made the best of his vacation each year—has used it in a way to keep his physical condition up to a standard and returns to work after his vacation rested. But this wonderful machine is often abused—neglected.

An office man who works only with his brain is the one who needs the recreation and play most. His muscles are soft and flabby. He gets out of breath when he runs upstairs or for a car. He is fat and usually of unhealthy color. He pants because his heart is so enclosed in fat that it is hard for it to perform its duty. His muscles are soft and flabby from lack of exercise. He gets tired when he attempts to walk to his office. His head aches—he has faulty elimination. He is fifty and looks sixty or seventy. He makes money—a successful man, you say. Where does he profit, when he has lost his health? He has not taken advantage of his opportunities. He has abused this fine machine, and, therefore, he is a failure. He must take a vacation—he must work and play.

Vacations should be a habit. At least once or twice a year people should change their work—get away from the grind and worry. Worry is almost a disease with our ambitious Americans and assists in killing as many people annually as any other disease. The worried man is more susceptible to disease because of his lowered resistance. Mental decay follows close upon work without recreation. Proper exercise of mind and body is needed to keep the human machine in order. Many are excessive in their desire to do a proper thing during vacation, and return to their work exhausted. In fact, many are compelled to recuperate before returning to their work.

Use your vacation to make your body fit to build a reserve for old age. A man may be old but not aged. Vacation may come but once a year, but you can have recreation daily. Do this and watch carefully the uses of your vital forces and longevity will result.

SLIPPING AND TRIPPING*

THE MOST SERIOUS PUBLIC AND INDUSTRIAL HAZARD

By H. WEAVER MOWERY

HAVE you ever noticed, when someone is burned to death in a factory fire, or blown up in a steam boiler explosion, how the fact is widely published with all the thrills and horrors that a star reporter can build around it? If a few people are injured in a train wreck the glare of publicity is turned upon that road. But never a word is said of the countless casualties from slipping and tripping. Such accidents are too commonplace. They are taken as a matter of course. There is nothing spectacular or thrilling in the breaking of a leg in falling downstairs. In a fire or wreck the injured ones are either heroes or martyrs. A person breaking his neck through slipping is usually considered careless or probably intoxicated.

It is amazing how many people have incorrect ideas of the relative seriousness of various hazards. Repeatedly it has been stated publicly that more than 80 per cent of all casualties in industrial life are caused by the carelessness of the injured. This charge is common. A bulletin recently distributed widely stated that of 584 accidents occurring in five months in a certain plant, at least 83 per cent. were caused by the carelessness of the men themselves. Another bulletin, issued by the central safety committee of one of our largest corporations, giving the principal causes of the accidents occurring in the plants of that company in the period from January to June, 1915, contains a list of 57 accidents. According to the safety committee, not one of them was due to a lack of protection by mechanical safeguards, but to "careless practices on the part of the workers."

Another and most striking example of a certain mental attitude toward the causes of casualties was given in a recent publication, wherein the following table appeared, viz.:

	Per cent.
Carelessness of injured	71
Miscellaneous	24
Carelessness of others	3
Lack of mechanical guards	2
Total	100

If it is desirable to charge all casualties to carelessness, the 2 per cent. due to lack of mechanical guards also might be charged to carelessness, since it is a form of carelessness not to have needed mechanical guards. Then all the casualties would be charged to carelessness and the goal toward which a few seem to be striving would be reached.

In a certain case that was brought to my attention, the individual who made up the accident reports was called to the central office; exception was taken to his reports and he was definitely instructed to "blame the accidents on the men." There is considerable similarity between the "safety" man who charges accidents to carelessness and the manager who instructs his subordinate to make his records "blame the accidents on the men." Such an attitude toward accident prevention is absurd. It is an outgrowth of the archaic common law defences.

What is desirable is not something to blame, but accurate knowledge whereby accidents may be prevented. The practice or even the theory of accident prevention is far from being an exact science. Present statistical classifications of casualties are misleading. The *causes* of accidents are not clearly shown. In many cases casualties are erroneously charged to other than promoting causes.

When casualty lists show clearly the actual promoting causes and their relative seriousness, then it will be known along what lines accident prevention should be concentrated to get maximum results. Moreover, when that time comes, and it is nearly here, there will be a readjustment of conceptions as to the relative seriousness of various hazards.

While it has been difficult, for the reasons just stated, to get data that are conclusive, yet there are available some facts which tend to show that a certain type of hazard is causing more casualties than result from belts, pulleys, setscrews, shafting, ladders, gears, elevators, cranes, planers and jointers all combined. More casualties than from almost any other public or industrial hazard are caused by slipping and tripping. And yet less effort has been directed toward the elimination of this type of hazard than has been given to each of the above-mentioned hazards, which combined are less productive of casualties.

These records are no doubt fairly accurate. But many casualties having slipping and tripping as their promoting causes are frequently classified under other headings. If a person working around power-driven machinery slips and is caught, losing a finger or his life, the casualty is often wrongly classified as "from unguarded machinery." Out of 74 cases of "gear accidents" reported to one insurance company, four were caused through slipping or falling into gears.

The same conditions were noted in an electrical casualty list. Of 35 serious "electrical shocks" casualties, four were caused by "slipping against live parts," and of these two were fatal.

If all the casualties whose promoting cause was slipping or tripping were subtracted from the classes in which they are erroneously recorded and added to their own kind, the necessity for active concentrated effort toward eliminating slipping and tripping hazards would be even more apparent than at present.

Statisticians seem to be aware of the discrepancies in the older records. The more recent records show proportionately many more casualties from slipping and tripping than is the case in the older records of New York and Massachusetts. Recently I was given a list of casualties in certain properties comprising railway, gas, electric light and power, and hydroelectric plants. The corporation operating these plants is fortunate in having a progressive safety supervisor who works things out to a definite conclusion. In the 34 properties concerned 20 per cent. of the total casualties were caused by slipping and tripping, and resulted in 20 per cent. of the total lost time. This record is accurate and may be taken as a true index of the real seriousness of the tripping and slipping hazard.

But there are some who hold the opinion that though the total number of casualties from slipping and tripping heads the list, yet their severity may not be great enough to merit concentrated attention. In the 34 companies just mentioned 13 per cent. of the total lost time was caused by electric shock which is a prime hazard in that line of business, but 20 per cent. of the lost time was caused by slipping and tripping.

The severity of the casualties from slipping and tripping is also illustrated very clearly by the records given to me by

*A paper read March 20, 1916, at Franklin Institute, Philadelphia, before the Philadelphia Local Council of the National Safety Council.

George P. LeBrun, of the coroner's office of New York City, viz.:—

FATALITIES IN NEW YORK CITY (MANHATTAN) FROM FALLS ON STAIRS AND SIDEWALKS—SLIPPING, TRIPPING, ETC.

Year	1912	1913	1914	1915	Total (4 years)
Number	164	163	170	128 (a)	625

(a) Owing to an active campaign against sidewalk hazards there was a reduction from 68 sidewalk casualties in 1914 to 35 in 1915.

In addition to furnishing a definite comparison between the numbers of fatalities from various hazards and clearly showing the severity of the slipping and tripping casualties, there are several other noteworthy features in these records. For instance, in 1915 there was a reduction from 1914 in total accidental fatalities of about 16.5 per cent. No doubt this is due to the "Safety First" agitation which has been quite strenuous in New York. The reduction is apparent in all classes except automobiles, subway and elevated railways, which increased. In surface car fatalities there has been a steady decrease from 131 in 1908 to 41 in 1915, due largely to near side stops, stepless cars and other improvements in car design and operation. Automobile fatalities, still on the increase, are again in the lead. The next is "falls on stairs and sidewalks." These might be called slipping and tripping fatalities, for more than half of them were caused directly by slipping. In the four years just past there were 625 fatalities recorded in Manhattan from this source alone. In 1914 and 1915 there was a total of 298 from slipping, tripping, etc., on stairs and sidewalks, while the total for the same period from elevators, fires and surface cars combined, and usually considered more serious, was only 283.

Still another way to emphasize the seriousness of the slipping and tripping hazard is to note carefully the actual amount in dollars and cents awarded as compensation, hospital expenses, etc., in Ohio, and reported by the Industrial Commission of that State:—

AMOUNTS AWARDED FOR SOME CLASSES OF CASUALTIES. INDUSTRIAL COMMISSION OF OHIO.

(Year ending June 30, 1915.)

Cause.	No.	Amount.
Slipping, Stumbling and Falling on Stairs, Floors, etc.	3,595	$152,986 45
Cranes	917	88,329 00
Belts and Pulleys	417	36,662 34
Planers and Jointers	333	33,640 56
Saws	1,088	66,552 00
Ladders	674	49,574 57

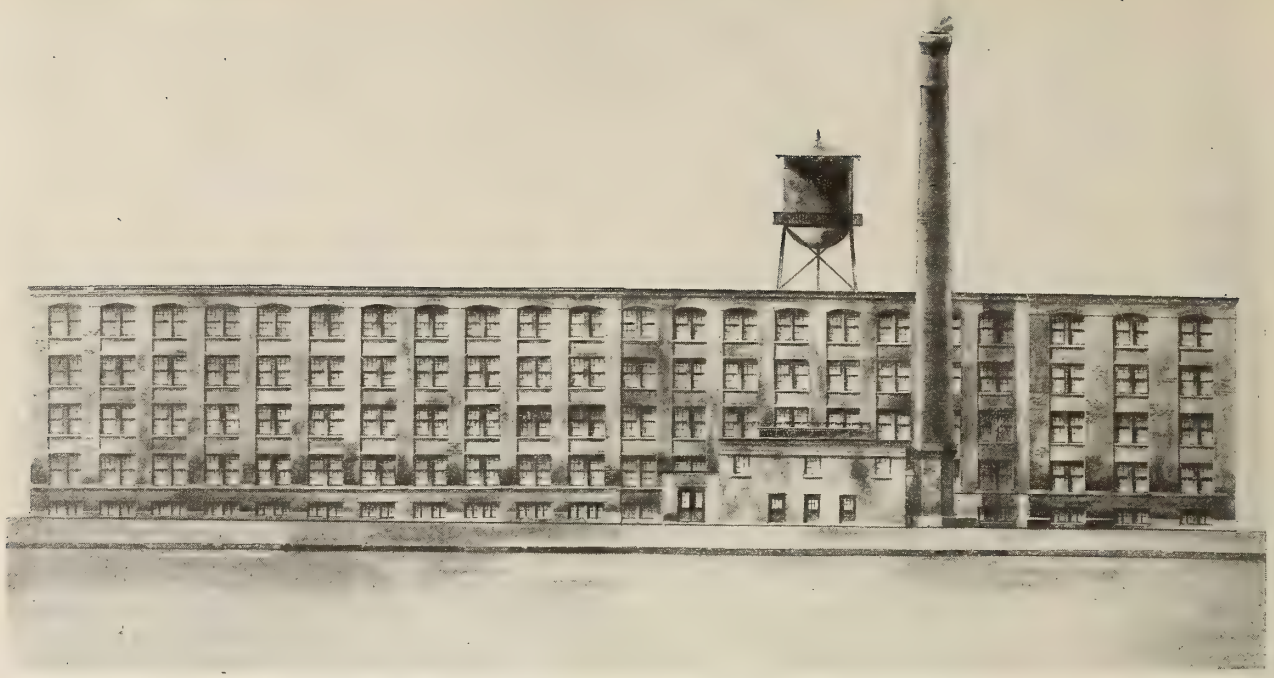
From these records it is apparent that slipping, tripping and falling in Ohio have been much more expensive than any one of five other typical hazards.

Though slipping and tripping cause a vast number of casualties, which are not lacking in severity and which cost unexpectedly large sums, it is extremely difficult to arouse people to the necessity of action to reduce these figures. Considerable effort and expense on the part of industrial establishments and substantial encouragement from rating boards have been directed toward reducing the hazards from saws, planers and jointers, belts and pulleys, etc. Of course, effort along these lines should not be decreased, but effort and encouragement in proportion to the seriousness of the hazard should be given to reducing slipping and tripping. How shall we proceed?

Let us first determine the promoting cause of tripping and slipping casualties. Shall we attribute them to carelessness or to lack of safe material conditions? Shall carelessness be assigned as the promoting cause when someone pursuing his normal activities with normal care is injured? I do not contend that greater care on the part of the injured or his associates would not prevent many accidents; but I maintain that a great majority of casualties can be prevented by mechanical or material means. Therefore, I propose a new safety axiom, viz.: *Material conditions should be such that persons may pursue in safety their normal activities without abnormal care.* Some such standard must be maintained if success is to attend any effort toward the elimination of many types of casualty and especially those from slipping and tripping. Carelessness is an excuse. It is not a cause. The causes of slipping and tripping are unsafe material conditions.

In a certain large office building in New York there was an average of nearly four accidents per week for a long period, occurring while persons were getting on and off elevator cars. Many would blame such accidents on the carelessness of the injured. Most of us have gotten on and off elevators thousands of times without injury, and it may seem that carelessness might be blamed for the injuries that do occur. But in this particular case the superintendent of the building finally was induced to install, at all floor landings, a strip of anti-slip material about 18 inches wide, along the entire bank of elevators. Since then not a single fall has been reported. The uneven stopping at floor levels, the speed and volume of the traffic remain approximately the same except for a slight increase in the volume. Material conditions were made safe and now the people get on and off the elevator cars without injury.

To show clearly and place beyond doubt the fact that slipping and tripping casualties are not caused by carelessness, but by unsafe material conditions, and that they can be eliminated by proper effort, I will give another example that has come to my attention. On the main stairway of the Pennsylvania Railroad Terminal in Philadelphia there were twenty-one accidents in six weeks. At the North Philadelphia station of the same railroad there was an average of two reported falls per day on certain stairs for a period of two months. No doubt many statisticians would have claimed that these casualties were caused by the carelessness of the injured. However, the safety experts of the Pennsylvania Railroad reached different conclusions with favorable results. Absence of handrails, poor lighting, improper tread and riser dimensions, absence of nosing overhang and other purely mechanical defects, are some of the causes of stair accidents. But the principal immediate or promoting cause is in unsafe treads. In this case the steps were equipped with a type of tread having a smooth metal nosing edge and heel-catching grooves or depressions. Observation showed that persons descending the stairs would slip on the metal nosing edge, the foot would slide forward and the front of the heel would catch in one of the grooves, throwing the person forward, who would frequently strike upon the head. The treads were then replaced by another type having anti-slip nosing and no heel-catching grooves. At once the accidents ceased, and during the time observations were continued, for the following three months, not a single fall was reported. Other conditions, including lighting, traffic conditions, etc., remained the same. The change in treads from an unsafe to a safe type eliminated the danger to the pedestrian, unable subconsciously to discern clearly which one of the lines extending in the same direction was the line of the step edge, and more important still, it removed the promoting cause of accidents—the slippery nosing edge and heel-catching depressions. From 141 accidents in two months to none in three months by the use of safe treads is conclusive evidence of the possibility of eliminating slipping and tripping casualties, and that material conditions can be made so safe that people may pursue their normal activities without abnormal care.



Municipal Factory in the City of Three Rivers, Que.

A CANADIAN CITY'S EXPERIMENT

Quebec Municipality Erects Large Factory Building which will be Rented to Manufacturers

By W. JOSEPH SHEA

Industrial Commissioner, Three Rivers, P.Q.

THREE RIVERS wants more industries. That is an ambition which it does not seek to conceal. It has made special efforts to bring them to the city and has offered such inducements as cheap power and labor, and tax exemption. But in spite of the best endeavors to attract manufacturers, obstacles have been met with. One of the most serious of these was lack of necessary buildings. Some prospective manufacturers were not willing to make the investment necessary to erect a plant. Others did not have time to wait, while a building was being put up.

To remove or lessen these disabilities, the plan was suggested of constructing a municipal factory, space in which might be rented on a no-profit basis to such industries as were either unprepared to build for themselves or were in a hurry to get started. The plan was accepted by the city fathers, with the result that to-day Three Rivers has a fine large factory building all ready for occupation by new manufacturing concerns.

The plans show a building something like an L in shape, being 35 feet long, 94 feet deep at one end, 48.8 feet deep at the other, and 55 feet high. It consists of four storeys and a basement, with a boiler house 12 feet from the main building. The foundations are of reinforced concrete; the walls of plastic brick; while the remainder of the structure is of mill construction. Each floor is supported by 28 wooden columns. On the first and third floors are the women's toilets, and on the ground and second floors the men's toilets; here the floors are of concrete. The roof is of gravel. Each storey is provided with a fire door and is equipped with sprinklers, and at different points are two fire escapes.

There are two entrances, one on the ground floor on St. George Street, and the other at the rear, the latter giving access to the various floors. A freight elevator is to be installed near the principal entrance, while a goods platform is provided for the ground floor. The building is exceptionally well lighted by windows on all sides.

A novel feature is the method adopted for disposing of water accumulating on the different floors in the event of fire. At the level of every floor line and between the windows, on inclined planes, scuppers are inserted through the walls, enabling the water to flow to the outside, as the pressure opens a small iron trap on the outside face of the wall, thus releasing the water, and providing protection to the floors below.

The boiler house is a separate building of brick with concrete foundations, 12 feet from the factory. It is 43 x 37 feet, together with a pump room, 24 x 13 feet. The chimney stack is 100 feet high. Provision is made for four boilers, but at present two tubular boilers only are to be installed on concrete foundations. A small centrifugal pump and receiver, direct connected to an electrical motor, will be situated in the basement, and a larger automatic combination steam and electric pump and receiver of the same make will be placed in the pumping room. This will also be direct connected to an electric motor. Between the boiler room and the main factory the supply and return pipes will be laid underground in a trench 5 ft. 6 in. deep. Cast iron radiators are to be set against the walls on each floor. An inclined wooden platform, eight feet from the ground, will be erected in front of the boiler house. This is for the purpose of receiving and discharging coal; the wagons will be drawn up the platform and their contents dumped into coal bins on the ground at the side of the platform. The latter is supported on wooden posts with concrete footings.

The building is not all rented yet, as it has only recently been completed, but a good many enquiries about it, particularly from American firms, are being received.

WAR BONDS FOR EMPLOYEES.

Plan Adopted by a Canadian Company to Enable Employees to Participate in the War Loan.

Among the various schemes devised by Canadian companies to help improve the lot of the working man, that of the Dominion Bridge Co., Limited, and its subsidiaries, the Montreal Ammunition Co. and the Dominion Copper Products Co., is worthy of commendation. They have made arrangements whereby their employees may become possessors of bonds of the first war loan on the most favorable terms. To explain the scheme, the circular issued by George H. Duggan, vice-president and general manager of the Bridge Company, may be reproduced. It runs as follows:—

The Directors of the Dominion Bridge Company, Limited, desiring to give the employees of the above-named Companies an opportunity to invest their savings in Dominion of Canada War Loan bonds, have made arrangements whereby the employees can subscribe for a small amount of the bonds issued in December, 1915. The bonds offered are of $100 par value, repayable in gold on the 1st of December, 1925. The interest is 5 per cent. per annum, payable half-yearly, on the 1st of June and the 1st of December, on presentation of the coupons attached to the bonds at any chartered bank anywhere in Canada.

The issue price of the bonds was 97½ per cent., at which price the Dominion Bridge Company is ready to sell them to the employees.

Conditions.

(1) Any bona fide employee of the above-named Companies whose application is endorsed by his foreman may subscribe for a $100 bond and pay for it in instalments of not less than $10.00 cash in each payment, except the last, which may be of an amount necessary to complete the purchase price of $97.50.

(2) A receipt will be given to the employee with his first instalment and will have endorsed thereon each subsequent instalment until the amount is paid in full, when the receipt will be exchangeable for a Government bond. Books of record will also be kept showing the state of each employee's subscription, so that in the event of the receipt being lost reference may be made to the book of record.

(3) Interest will be allowed by the Bridge Company on all deposits at the rate of 5 per cent. per annum from the date such deposits are made, except in the event of the employee leaving the company's service. See succeeding clause.

(4) Instalments will only be received from bona fide employees of the above-named companies while they continue in the employ of the company in good standing. If a man leaves or is discharged his subscription for the bond is cancelled by his ceasing to be an employee of the company, and he will at once be handed back in cash the actual amount that he has already paid in on account of his subscription without any allowance for interest.

(5) When the subscription for any bond is completed and the bond is handed to the employee, it will have attached to it current coupons entitling the holder to collect $2.50 at the next and succeeding interest periods; but the holder will be charged the proportion of the current coupon due at the time the bond is transferred.

The Directors of the Dominion Bridge Co. strongly recommend this investment to the attention of the employees because it offers an opportunity for an employee to invest small savings in an absolutely safe security which, by its terms, will be free from any war tax which may hereafter be imposed and in all probability will increase in value. They wish to call attention, further, to the statements of the Canadian Minister of Finance and of responsible Ministers of the British Government, pointing out that the ability of Great Britain and her Allies to conduct the war to the present stage and the prospect for success in future is due to her financial strength, and that it is the duty of every one who has the privilege of belonging to the British Empire to advance such funds as he is able for the use of the Government in carrying the war to a successful conclusion. If such an arrangement as above outlined were generally carried out and responded to, a very large amount of money would thus accrue to the benefit of the Empire as well as to the benefit of those lending it.

In further explanation of the foregoing conditions:—

Clause 1. Instalments may be paid in any amount but not less than $10.00, and may be paid at any time, it being unnecessary to pay them regularly. For instance, a subscriber may pay $10.00 with his subscription, miss a month, pay $10.00, $15.00, $20.00, or whatever amount he wishes; pay another instalment the succeeding day, or wait for several months if he desires. Or, he may pay an instalment of a larger amount up to, say, $80.00, miss as many months as he pleases and pay further instalments when he pleases so long as they are not less than $10.00, except in the case of the final instalment, which will be the amount necessary to complete the bond and probably be less than $10.00. No matter how the instalments are paid, the purchaser will receive interest on all of his instalments until the bond is finally paid for, so that if the subscription should run a year on the first $10.00 instalment an employee would receive at the end of the year a credit of 50c.; on the instalment made one month later, 45c.; on the instalment made a month later, 41c., etc. Or, if he should make his first payment, say, $40.00 and he did not finally pay for his bond until the end of the year, he would receive $2.00 interest on the first instalment of $40.00. The interest on the instalments will be credited on the purchase price of the bond and may reduce the actual payments, depending on how the instalments are paid, to somewhere in the neighborhood of $95.00 instead of $97.50.

It may be pointed out that while the bond nominally bears 5 per cent. interest, the bond will actually cost the purchaser something less than the nominal price of $97.50 for which it is sold, on account of the interest he receives on his instalments. If it cost him $97.00 the actual return is nearly 5.16 per cent.; if it cost him $95.00 the return would be 5¼ per cent.

Clause 2. Subscribers are warned to be very careful of their receipts, as the loss will involve some delay in procuring the bond when the payments are fully made and that there will be some expense for the execution of the legal documents necessary to provide against the lost receipt being made use of by another not entitled to it. These proceedings will probably cost about $5.00, which will be charged to the employee losing the receipt.

STURGEON FISHERIES.

Thirty years ago, when Canada's sturgeon fisheries were first being exploited commercially, the flesh of the sturgeon sold for four or five cents per pound, and the prepared eggs, or caviare, for ten cents per pound. The fishery was prosecuted very energetically, and, in 1897, when the record output was attained, caviare had advanced in price to 25 cents per pound. To-day, as a result of continued over-fishing, the fishery is virtually depleted, and sturgeon flesh and roe are the most valuable products of Canadian waters. The eggs are worth over $1.00 per pound, while the flesh is the highest priced of all our fish. The production has steadily declined, until, during the last five years, the annual output has averaged less than one-third of that of twenty years ago.

While the revival of the sturgeon fishery presents considerable difficulty, it should be undertaken, if at all feasible. The sturgeon has been accused of predatory habits, but has been acquitted of this charge by the foremost Canadian scientists. Every portion of the fish can be utilized for the manufacture of some valuable commodity; there is absolutely no waste. The sturgeon fishery has never figured prominently among Canada's fisheries resources, but, carefully protected from over-fishing, it should form a permanent and very remunerative source of revenue to Canadian fishermen. To permit such fisheries to become extinct, unless detrimental to others of more value, is commercial waste and inefficiency.

POTASH FROM KELP.

Memorandum Prepared by Edward J. Leveson and Presented to the Dominions Royal Commission when in Vancouver Last Month.

The pre-war price in New York of potassium chloride (muriate of potash, 80 per cent. strength) was $39.00 per ton, Germany producing 65 per cent. of the world's supply.

The present price in New York is $320.00 per ton. It has been as high as $500.00 per ton since 1914, but recent developments in the Utah fields of alunite deposits are leading to increased production.

The pre-war price of crude iodine was $3.20 per lb. Its present price is $4.00 per lb. An increased production is coming from Japan.

The following is an extract from a recent memorandum sent to me by the Bureau of Soils of the United States Department of Agriculture:—

"An ample supply of potash for the needs of farmers can be obtained from the giant kelp beds. These beds have been surveyed by the Bureau of Soils and a report, accompanied by maps showing in detail their extent and location, recently has been issued. Harvesting is accomplished easily, as the kelp grows in open water and barges fitted with mowing attachments can be used.

"For utilizing the kelp, several methods are feasible. It may be dried and ground. In this condition it contains all the salts originally present, which are mainly potassium chloride and sodium chloride. This material has ideal mechanical properties for use in mixed fertilizers. When the pure potassium chloride is desired it is necessary to separate the juice from the organic material and then to remove the sodium chloride. The latter can be done readily by recrystallization; but the separation of the juice from the organic material is more difficult, for the reason that the kelp is nonfibrous and in attempts to effect separation by filtration the filters become clogged and unworkable. The problems yet to be worked out commercially are the best methods of drying the wet kelp and of effecting the ready and efficient separation of the plant juices from the organic material. Investigation of these questions has proceeded far enough to indicate that their solution should not be very difficult.

"Three large concerns have begun operations for the manufacture of potash from kelp. While potash is indispensable in the preparation of fertilizers, it is also used for many other purposes, including the manufacture of matches, glass, liquid soap, and munitions. The prices offered under existing conditions by the manufacturers of such articles undoubtedly will cause practically the entire output of these concerns to be diverted from the fertilizer industry. It seems unlikely that normal conditions will be restored in the immediate future and that potash can be secured from foreign sources as heretofore in time for the next crop planting season. It also seems improbable that private enterprise will provide potash from domestic sources for agricultural purposes in time. It would require ninety or more plants, costing approximately $50,000 and having an operating capital of about $25,000 each, to produce the quantity needed for agriculture. This would involve the assumption that the commercial phases of the problem were satisfactorily solved. Even if the requisite funds were available, it is a question whether operations could begin in time to provide an adequate supply for the coming year. The Department is investigating all aspects of the question and is planning to send experts to California to study the situation and especially to consider possibilities of production on a commercial scale.

"One fact has operated in a measure to embarrass private enterprise in this field. There is no legislation in any of the Pacific Coast States, along whose shores the kelp lies, providing for the leasing of the kelp beds. Without leases private investors would have no assurance that plants erected by them would have the necessary control over the kelp within their vicinity."

Dr. A. T. Cameron in his report to the Biological Board of Canada, 1915, states:—

"The kelp beds of the British Columbia waters can supply far more potash and iodine than the amounts used at present in Canada. Large quantities could probably be marketed at a profit at pre-war rates. Should the present war be of long duration, all Canadian requirements can be met from this source. In any event, the industry, carried on on a moderate scale, would almost certainly be lucrative.

"Definite evidence is adduced that the growth of kelp is largely dependent on the salinity of the containing water."

He estimates that the available kelp from the beds in the inlets on the Queen Charlotte Islands would amount to more than a million tons.

There are no definite data upon which to base the possibilities of working this industry on a commercial basis. Previous experiments, prior to the war, in California, were not very successful, owing to difficulties of cutting and harvesting the kelp, but a harvester has been invented and is at present being operated on the coast of California.

There is a plant, at present idle, in the Queen Charlotte Islands, which a chemical engineer of Victoria states is ideal with regard to equipment and arrangement for the curing, drying and refining of kelp and potash products, and with the addition of probably $500 worth of apparatus, this plant, he thinks, is in shape to handle at least 60 tons of wet kelp per 24 hours, and produce potash with a handsome profit on an economical working basis.

I have supplied all the information in my possession to Mr. Arthur D. Little, of the Commission of Conservation at Montreal, and he tells me that the maps and reports which I sent him are now receiving the attention of an expert in the handling of kelp and the recovering of potassium salts therefrom.

In my opinion this industry is well worth the attention of the Dominion Government. Capital for private enterprise to take this up is difficult to attract in these strenuous times.

MAY CANCEL INSURANCE.

Unless some better fire protection is given in Northern Ontario, several insurance companies will withdraw from the country. In fact, some have already withdrawn. This is the intimation given *The Northern Miner* by the manager of one of the largest insurance companies operating in Northern Ontario, who has been surveying his company's loss from the big fire. It is possible that some insurance on plants and buildings of mines in the outlying districts will be cancelled, as the insurance companies are privileged to do, on notice.

The insurance men state that, until the Government puts the fire ranging on an efficient basis, the situation will not change. They claim that their losses have been so great that it will take many years of premiums with no further losses to catch up.—*The Northern Miner.*

PAINTING OF FARM IMPLEMENTS.

The painting of farm implements for their protection and preservation has apparently received very little consideration by Canadian farmers, if one may judge by the information secured by the Commission of Conservation in the survey conducted on 100 farms in each of four counties in Ontario. In Waterloo, not one farmer who painted his implements, was found among the hundred, in Carleton only one, in Northumberland three, and in Dundas eleven.

The use of paint on both the wooden and metal parts of machinery gives a protecting cover against deterioration by use and weather, apart altogether from the general improvement in appearance. The cost of prepared paint for the purpose is very small, and experience in the work is unnecessary.

The initial cost of farm implements means to the farmers a large outlay. This investment should be protected. Depreciation from rot and rust is rapid, when once these conditions are established. For the actual money saving as well as for the more prosperous appearance it gives to the farm and farmer, the regular overhauling and painting of the farm implements should be a recognized part of the year's work.

TARIFF

By J. R. K. BRISTOL

TO MANUFACTURERS WHO CONTEMPLATE ENGAGING IN EXPORT BUSINESS

Are you aware that you have the privilege of practically duty free materials for manufacturing for export? Full information on this matter can be obtained from the Customs Department, Ottawa; or from the Manager, The Tariff Department, Canadian Manufacturers Association, Toronto

EXPORTS TO HOLLAND.

Goods must now be Consigned to the Netherlands Oversea Trust.

By an Order in Council, dated the 14th September instant, goods heretofore permitted to be exported to Holland must now be consigned to the Netherlands Oversea Trust. In regard to goods permitted to be exported to Holland when consigned to the Netherlands Oversea Trust, before export of any such goods is allowed, Collectors of Customs of Canada, at ports of exit, are requested to see that the goods are so consigned, *and that there is attached to the Bills of Lading a certificate issued by the Netherlands Oversea Trust Company, The Hague, Holland, consenting to the goods being consigned to the Trust on behalf of the Dutch importer.* Therefore, the Canadian exporter should obtain such a certificate through the Dutch importer from the Netherlands Oversea Trust before making further shipments of goods into Holland. It should be noted that goods which were prohibited to be exported to Holland prior to this Order in Council of the 14th instant, are so prohibited still.

RECENT DECISIONS.

Important Rulings Made by the Board of Customs and Customs Department on the Tariff on Various Commodities.

File No. 81586:—Tapered logs, eight sided, not further manufactured than sawn or hewn, declared to be entitled to entry under tariff item 503.

File No. 81946:—Sapphire meter jewels, cupped for bearings, but unset, declared to be dutiable under tariff item 648, in effect from 1st April last.

File No. 79948:—Old negative dry plates, imported to be used in the manufacture of dry plates, declared to be dutiable under tariff item 711.

Departmental Decisions.

File No. 80666:—Baker's fresh grated cocoanut, with the milk, put up in tin cans and containing nothing except pure cocoanut and cocoanut milk, manufactured by Franklin Baker Company, Philadelphia, dutiable under tariff item 711.

File No. 87128:—Materials, one described on invoice as oil cake meal, manufactured by J. Bibby & Sons, Liverpool, England; and the other as calf meal or oil meal, manufactured by Ryde & Co., Chicago, both ruled as dutiable under tariff item 711.

File No. 68116:—Sauer-kraut, in cans or other air-tight packages, dutiable under tariff item 86. When in other containers, dutiable under tariff item 87.

Legal Standard Wire Gauge.

Superseding Appraisers' Bulletin No. 891.

The Customs Tariff of Canada, 1907, Section 2 (f) provides as follows:—

"Gauge," when applied to metal sheets or plates or to wire, means the thickness as determined by the "Imperial Standard Gauge."

Below are given the numbers and corresponding diameters of the British Imperial Wire Gauge, the legal standard referred to above, viz.:—

Descriptive number	Equivalent in parts of an inch	Descriptive Number	Equivalent in parts of an inch
No. 7/0	0.500	No. 23	0.024
6/0	464	24	22
5/0	432	25	20
4/0	400	26	18
3/0	372	27	0.0164
2/0	348	28	148
0	324	29	136
1	300	30	124
2	276	31	116
3	252	32	108
4	232	33	100
5	212	34	0.0092
6	192	35	84
7	176	36	76
8	160	37	68
9	144	38	60
10	128	39	52
11	116	40	48
12	104	41	44
13	0.092	42	40
14	80	43	36
15	72	44	32
16	64	45	28
17	56	46	24
18	48	47	20
19	40	48	16
20	36	49	12
21	32	50	0.0010
22	0.028		

In view of the provisions contained in item 404 of the Customs Tariff Amendment of 1914, Bulletin No. 779 of Feb. 23rd, 1914, respecting Wire Gauges is hereby cancelled with respect to wire covered by item No. 404. Bulletin No. 779 still applies to all other free wire.

In regard to wire subject to duty or dumping duty, as there is usually an extra charge made for drawing wire smaller than the Base size (No. 9) and as such charge varies according to the gauge of the wire, the following rules may be observed in estimating the charge for "extras" entering into the value of the wire, viz.:—

For the purpose of computing extras on wire of irregular gauge number, the size of the wire may be reckoned as represented by the next smaller gauge (higher number) as numbered on the Imperial Wire Gauge.

Under Tariff Item 404, Steel Wire of Nos. 9, 12 or 13 Gauges must not vary more than four one-thousandth of an inch from such gauges in order to be admitted free, otherwise, such wire is dutiable.

CERTIFICATES REQUIRED.

In the Case of all Goods Imported from Norway, Sweden, Denmark, Holland and Switzerland.

By an Order in Council, dated the 14th September instant, all goods imported into Canada from Norway, Sweden, Denmark, Holland, and Switzerland must be accompanied by Certificates of Origin and Interest, issued by a British Consular Officer in the country from whence the goods are exported, to the effect that the goods have not been manufactured or produced in enemy territory, and that no person who is an enemy or is treated as an enemy under any law or proclamation for the time being in force relating to trading with the enemy or relating to trading with persons of enemy, nationality or association has any interest in such merchandise.

Goods imported from the countries above mentioned, and which are unaccompanied by a certificate of origin and interest, are not to be admitted to entry at Customs.

With a view to enabling importers to communicate with exporters in these countries, certificates will not be required in respect to goods actually shipped from the countries named prior to the 10th October, 1916.

The prescribed form of Certificate of Origin and Interest follows, viz.:—

Form of certificate of origin and interest.

I, ...hereby certify that Mr. ..... (producer, manufacturer merchant, trader, etc.), residing at..... .....in this town, has declared before me that the merchandise designated below, which is to be shipped from this town to ..... consigned to (*a*) .....(merchant, manufacturer, etc.) in the Dominion of Canada, has not been manufactured or produced in enemy territory; that no person who is an enemy, or is treated as an enemy under any law or proclamation for the time being in force relating to trading with the enemy or relating to trading with persons of enemy nationality or association, has any interest in such merchandise; and that he has produced to my satisfaction invoices or other trustworthy documents in proof thereof.

No. and description of cases.	Marks and Nos.	Weight or quantity.	Total value (b)	Contents.	Name of producer or manufacturer.

This certificate is valid only for a period of not more than (*c*) ..... days from the date hereof, and for not more than (*d*).....

(Signed) .....

(Signature of person declaring.)

(Signed.) .....

(Signature of consular authority issuing certificate and date.)

(Consular Fee Stamp.)

(*a*) If desired the word "order" may be inserted here, instead of the name of the purchaser in the Dominion of Canada.

(*b*) This column may be left blank if desired.

(*c*) Here insert number of days for which certificate is valid.

(*d*) Here insert quantity or weight.

SPAIN ADMITS WOOD PULP FREE.

Export Duty on Certain Kinds of Paper also Suspended.

The Board of Trade are in receipt, through the Foreign Office, of telegraphic information from H. M. Ambassador at Madrid to the effect that, in virtue of a Spanish Royal Order of the 5th August, the export duty on paper (in rolls) weighing from 41 to 50 grammes per square metre (see the notice at page 964 of the "Board of Trade Journal" for the 30th March last) has been suspended, *and that wood pulp and wood required in the manufacture of paper may be imported into Spain free of Customs duty.*—(*Board of Trade Journal*, London, Eng., August 24th, 1916.)

Suspension of Export Duty on Certain Paper and of Import Duty on Wood Pulp, etc.

GERMANY TO MAKE FINE YARN.

Formerly Obtained Ninety-five Per Cent. of Supply from Britain.

According to the *Frankfurter Zeitung* of 22nd July, attempts are about to be made to manufacture in Germany the finer counts of yarn. The German weaving, electrical and other industries have hitherto obtained from the United Kingdom more than 95 per cent. of their fine cotton yarns. Of the total cotton yarns exported from the United Kingdom in 1913, the value of which was £15,000,000, no less than £5,000,000 worth was sent to Germany, and the greater part of this quantity was made up of fine yarn.

One concern, the Sächsische Maschinenfabrik vormals Richard Hartmann, in Chemnitz, is said to have already purchased a large site for the erection of a factory specially intended to manufacture machinery for the purpose.—(*Board of Trade Journal*, London, Eng., August 24, 1916.)

PASSPORTS FOR AUSTRALIA.

Now Needed in the Case of all Persons over Fifteen Years of Age.

The Foreign Office notify that after 1st September, 1916, no person over fifteen years of age will be permitted to land in the Commonwealth of Australia unless in possession of a valid passport issued or visé by a competent British authority. British subjects embarking for Australia from the United Kingdom must carry valid passports issued or visé by the Passport Office, Downing Street, London, S.W. Alien subjects so embarking must carry passports issued by their own authorities and visé by the Passport Office.

Persons embarking from foreign countries for Australia must first have their passports visé by a British Consular Officer in the country of embarkation.—(*Board of Trade Journal*, London, Eng., August 24, 1916.)

FOREIGN TRADE OF CANADA.

(Comparison 1914, 1915, 1916.)

IMPORTATIONS.

	Month of August.			Five Months Ending August.		
	1914.	1915.	1916.	1914.	1915.	1916.
Dutiable goods	$29,497,076	$24,205,170	$38,398,579	$136,008,385	$102,075,678	$178,631,967
Free goods	14,893,527	16,627,652	33,932,435	79,112,130	73,486,521	143,566,914
Coin and bullion	11,452,719	812,891	17,721,634	12,764,520	3,244,799	19,611,632
Duty collected	8,358,948	8,430,565	12,096,555	36,840,480	36,511,037	58,160,063

EXPORTATIONS.

(For February.)

	——1914——		——1915——		——1916——	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
Products of the Mine	$4,667,558	$14,188	$6,090,379	$3,776,549	$7,636,581	$33,964
Products of the Fisheries	1,324,351	20,070	1,810,572	2,578	1,816,651	697
Products of the Forest	4,256,635	3,398	5,846,897	391	6,209,357	185,261
Animals and their Produce	8,780,787	92,260	9,193,103	146,655	11,779,483	171,840
Agriculture	7,425,227	10,924,673	6,895,726	3,448,795	35,207,729	1,120,436
Manufactures	5,049,472	591,655	10,690,464	378,123	33,197,925	563,392
Miscellaneous	6,702	903,378	567,013	151,239	243,302	154,493
	$31,510,732	$12,549,622	$41,094,154	$7,904,330	$96,091,028	$2,230,133
Coin and bullion	.....	471,208	.....	4,754,398	.....	32,344,620
	$31,510,732	$13,021,830	$41,094,154	$12,658,728	$96,091,028	$34,574,753

(Five Months Ending August.)

	——1914——		——1915——		——1916——	
	Domestic.	Foreign.	Domestic.	Foreign.	Domestic.	Foreign.
Products of the Mine	$21,289,124	$87,196	$24,496,114	$6,437,890	$33,961,496	$110,289
Products of the Fisheries	5,770,074	58,986	6,682,760	18,690	7,963,141	9,288
Products of the Forest	19,036,143	94,022	22,044,376	4,457	25,777,811	192,959
Animals and their Products	26,063,884	433,042	34,745,406	1,434,037	41,199,174	1,486,681
Agriculture	50,040,469	21,922,400	48,207,048	8,585,880	180,977,292	2,606,750
Manufactures	26,728,965	2,867,566	62,231,845	2,389,517	153,022,063	3,300,702
Miscellaneous	148,627	1,752,759	1,854,864	528,316	3,535,356	588,262
	$149,077,286	$27,215,971	$200,262,413	$19,398,787	$446,436,333	$8,294,931
Coin and bullion	100	3,104,869	.....	68,577,303	1,157	190,548,427
	$149,077,386	$30,320,840	$200,262,413	$87,976,090	$446,437,490	$198,843,358

New Incorporations

Information about various new and old enterprises, the incorporation of which has been announced in recent issues of the Canadian and Provincial Gazettes.

A number of Canadian companies have recently been formed for the purpose of manufacturing soap cleanser and cleaning powders of all sorts. The latest of these is called the Canada Cleanser Co., Limited, capitalized at $100,000, with head office at Toronto.

The Carola Company of Canada, Limited, Toronto, is the new and tuneful name of a $40,000 company formed by W. K. Cook and others to manufacture phonographs, talking machines, etc.

We regret to note that one new potash company has apparently come to grief. Chemical Refineries, Limited, of St. Catharines, attempted to manufacture potash from wood ashes. We understand that the process and method were perfectly feasible, but the raw material was lacking.

The apparent lack of success of other companies does not seem to deter Feldspar & Clay Products, Limited, a one-and-a-half million dollar corporation, with offices in Wiarton, Ont., from making a further attempt to produce economically this valuable material and its by-products.

H. G. Meir is interested in the new Franco-Canadian Canners' Corporation, Limited, Toronto, which has been recently formed with a capital of $100,000.

We understand that Hamilton Brass, Limited, Hamilton, Ont., is to be the successor of the old Hamilton Brass Company. The capitalization of the new company is $40,000.

The scarcity and high price of paper is, no doubt, responsible for the incorporation, with a capital of $100,000, of the Houpt Paper Mills, Limited, who, it is expected, will operate in Camden East, Ont.

Nobility Chocolates, Limited, St. Thomas, Ont., is the new company in which P. H. Kolb is chiefly interested, and was formed to acquire the real estate, plant, etc., of the Noble Manufacturing Company of St. Thomas. The new company has a capital of $100,000, and will continue to manufacture biscuits and various kinds of confectionery.

INSVRANCE

August Fire Losses.

According to estimates compiled by the *Monetary Times*, the fire loss throughout Canada during the month of August amounted to $803,109 as compared with the loss for July of $1,159,285 and $403,693 during August, 1915. This brings the total estimated fire loss for the first eight months of the year to $12,029,000 as compared with $8,580,858 for the first eight months of 1915 and $18,451,412 for the corresponding period of 1914.

Fire and Accident Prevention Day—October 9th.

The National Safety Council and the National Fire Protection Association have united in promoting the observance of the above day this year throughout North America. Special communications have been addressed to the leading commercial or civic organizations in all cities of 10,000 population or over. President Wilson and the governors of the various states have been asked to issue proclamations. The International and the Dominion Associations of Fire Chiefs, the Fire Marshals' Association of North America and the National and Dominion Associations of Credit Men have promised co-operation. Members of those bodies are asked to assist in this effort every way possible by getting in touch with any local plans already made or by initiating the observance where no steps are yet being taken.

Successful Workmen's Compensation Fund.

The Industrial Commission of Ohio have recently issued an interesting report showing the exceedingly satisfactory results attained by the Insurance Fund of that State. On the 15th of May last, the financial statement of the Employers' Fund showed a reserve for losses amounting to nearly two and a half million dollars, reserve for unearned premium of six hundred thousand dollars, a catastrophe reserve of over six hundred thousand dollars and a net surplus of nearly three hundred thousand dollars.

The State Fund has effected a reduction in the cost of Workmen's Compensation insurance to employers by no less than 56 per cent. The average rate charged by the fund in connection with eighty-three representative industries equals 114.43 per cent. as compared with an average rate charged the same industries by the Ohio liability insurance companies of 264.95 per cent. The excellent results attained say much for the skill and economy exercised by the Directors of the Fund.

State Fire Insurance for Revenue.

Certain politicians in Arkansas are advocating the conduct of fire insurance by the State "for revenue." The fire insurance companies have, for many years, been trying to do business in Arkansas "for revenue," but have only succeeded in binding themselves to contracts which have produced net losses. Thus in 1915 the losses incurred (without regard to operating expenses) in Arkansas equaled 96.8 per cent of the premiums, so that the net loss to the companies last year on their Arkansas transactions was probably $900,000. The loss ratio of the stock companies in the six preceding years ranged from 60.5 per cent. to 134.8 per cent. of premiums, to which must be added, say, 36½ per cent. for expenses. Just where the "net revenue" for roads and schools is to come from, if the business should be conducted by inexperienced politicians, is still an open question. If the ardent advocates of State fire insurance were to be placed in charge of the business and held personally responsible for a liberal net income from the transactions of the bureau, no surety company in the country would give bond that a dollar of net profit would be forthcoming, anxious as they are to secure reasonably safe business.

Ontario Insurance Commission.

The recent appointment of a Commission to investigate insurance conditions in Ontario should be of great interest to the insuring public as well as to insurance companies. At a preliminary sitting held on August 29th, the Commissioner, Justice Masten, outlined the scope of the inquiry and which is as follows:—

"(1) To inquire into and report upon:—

"(*a*) The methods by which insurance companies registered or licensed by the province of Ontario, their representatives or agents, transact all classes of business except the business of life and marine insurance, but more particularly as to fire insurance, automobile insurance, plate glass insurance, boiler insurance and accident insurance.

"(*b*) The methods, rules, regulations and practices of all associations, of such insurance companies and associations of representatives or agents of such insurance companies with regard to making, promulgating, enforcing or controlling rates, commissions, forms, clauses, contracts, or the placing of insurance.

"(*c*) The advisability of adopting statutory conditions for automobile, plate glass, boiler and accident insurance policies.

"(*d*) The existing laws of Ontario in relation to the foregoing and their practical operation.

"(*e*) The existing laws in Ontario in relation to unlicensed insurance and their practical operation.

"(*f*) Any matter arising out of the foregoing which it is necessary to investigate with a view to the above inquiries.

"(2) To make any such recommendations in regard to the above as he may think advisable."

The commission intimated that the principal consideration would be the rates of all classes of insurance, with the exception of life and marine, which are not included in the investigation. The Ontario Fire Marshal submitted a report which dealt mainly with the objects and activity of the Canadian Fire Underwriters' Association which, he stated, largely controlled the fire insurance rates of this Province. The report also dealt with the question of Government control of insurance rates and referred to legislative action taken by some of the United States of America in an endeavour to bring insurance rating under the supervision of the respective insurance departments. The Commission will resume its sittings on the 10th of October.

Convictions for Arson in United States.

The record for the number of convictions for arson in different states is an interesting exhibit. Such a record indicates to a considerable extent the degree to which the citizens of each state have been educated on the cause and effect of our fire waste. All of the fire marshals or other public officials having to do directly with the matter of securing convictions for arson tell of the great difficulty in ob-

taining a satisfactory verdict from a jury. In some states a conviction can only be secured where there is direct evidence that the defendant expected to take human life by his act. Many officials find that the only way they can get a man sentenced is to secure a confession and a plea of guilty from him. An interesting part of the study of results in different states is the decidedly better showing made where the office of fire marshal has been established for several years. In such states the educational work by that official has brought public opinion to the point where a jury is much more likely to convict than is the case in other states where no educational work has taken place. A comparison between the results in Ohio and certain other states brings out this conclusion very clearly.

Data obtained as a result of a canvas of fire marshals, insurance commissioners and other officials showed that in the seventeen states which reported, the number of convictions for arson, during 1915, amounted to 291, of which the State of Ohio alone was responsible for no fewer than 91. The Quarterly of the National Fire Protection Association points out that the fact that so many states either report "No convictions" or profess to have no information on the subject indicates that in these States no one is making a special effort to punish those committing the crime.

THE 1916 COST OF FOREST FIRES.

Canada has lost through forest fires in 1916 over nine million dollars. This equals more than six times what has been spent on forest protection work from coast to coast. The enormous sum wasted through this year's forest fires, most of which were preventible, would add another $480 to the first year's pension allowance of nearly 19,000 Canadian soldiers.

It is noteworthy that while some parts of the Dominion owe to rainy weather their immunity from fire damage, the season's record proves beyond gainsay that in areas where first rate fire protection systems were in operation, losses of life and property were held down to a remarkable minimum.

Quebec had some heavy fires in the Lake St. John and Saguenay districts; also in the Gaspe peninsula and west of Escalana on the Transcontinental railway. It is a striking fact, however, that within the 24,000 square miles of Quebec, covered by the two well-organized associations of limit holders, the amount of green timber burnt is practically negligible. This immunity was not a matter of luck but of consistent patient effort to educate settlers, lumber-jacks and others in care with fire, coupled with a system of promptly reporting all outbreaks, and attacking forest fires in their incipiency with large forces of men and modern equipment.

British Columbia faced fairly favorable fire conditions through the summer months and the cost of fire fighting was reduced by about 75 per cent. over the record of 1915. The number of fires was about half of last year. The British Columbia forest protection service is the most complete in Canada thus far and the saving of timber is a logical consequence.

A heavy average of rainfall kept fire troubles at arm's length in Alberta, Saskatchewan, and Manitoba, and this weather condition was undoubtedly responsible for the escape of the main areas of big timber throughout Ontario. The Clay-belt fires at the end of July and first week of August provided a tragic sacrifice of 262 lives and what is estimated to be six million dollars worth of property. There was practically no forest-guarding organization in the fire-swept district, except along the railway track.

New Brunswick escaped the risks of 1916 with a very small timber loss, Nova Scotia having a similar experience. The records of the Dominion Railway Board show that the private-owned railway lines of Canada have not been responsible this year for any damaging forest fires. Those that were started were promptly extinguished by railway employees.

WATER TANKS THAT ADVERTISE.

A few months ago an illustration was published in this magazine of a water storage tank that had been erected for the City Dairy, Limited, Toronto, in the form of a large milk bottle. The idea was to make advertising capital out of an otherwise commonplace, and oftentimes ugly, object. A somewhat similar application of the same principle has just been made by the Campbell Flour Mills Co., Limited, also of Toronto, who have turned the storage tank in connection with their sprinkler system into the replica of an immense flour bag. The tank, which is built entirely of steel, has been painted and lettered to represent exactly the sack in which the company's product is marketed.

Some idea of the size of this water tower may be gathered from the following data: The tank holds forty thousand gallons of water. The total height of the structure is one hundred and fifty-two feet above foundations. The tank itself is thirty-seven feet deep and eighteen feet wide, being built oval in cross-sections to correspond truly to the shape of a flour sack. The weight supported is over two hundred tons. The work was designed and executed by the Canadian Chicago Bridge & Iron Company of Bridgeburg, Ontario, which makes a specialty of this class of construction, the City Dairy Company's tank being also one of their products.



Fire Protection in Novel Shape

TRANSPORTATION

By J. E. WALSH

DOMINION'S ROYAL COMMISSION.

Scope of the Inquiry Now Being Made into Transportation Problems in Canada.

At the annual meeting of the Association, held in Toronto in 1915, a resolution was passed urging upon the Dominion Government the appointment of a competent Commission properly empowered for the purpose of seriously investigating transportation conditions in Canada, and making such reports and recommendations as might seem proper. The suggestion was made that the Commission make a thorough investigation of all transportation agencies including the building of new lines of railway, canals, harbors and other waterways. Action has recently been taken and the following Committee appointed:

A. H. Smith, President, New York Central Lines.

Sir Henry L. Drayton, Chairman, Board of Railway Commissioners for Canada.

Sir George Paish, British Financial Expert.

Their duties, as outlined in the Order-in-Council, are briefly as follows:

1. The general problem of transportation in Canada.

2. The status of each of the three transcontinental railway systems, that is to say, the Canadian Pacific Railway System, the Grand Trunk Railway System (including the Grand Trunk Pacific Railway and the Grand Trunk Railway and their several branches), and the Canadian Northern Railway System, having special reference to the following considerations:

(*a*) The territories served by each system and the service which it is capable of performing in the general scheme of transportation;

(*b*) Physical conditions, equipment and capacity for handling business;

(*c*) Methods of operation;

(*d*) Branch lines, feeders and connections in Canada;

(*e*) Connections in the United States;

(*f*) Steamship connections on both oceans;

(*g*) Capitalization, fixed charges and net earnings, having regard to (1) present conditions, and (2) probable future development with increase of population;

3. The reorganization of any of the said railway systems, or the acquisition thereof by the State; and in the latter case the most effective system of operation whether in connection with the Intercolonial Railway or otherwise.

4. Generally speaking all matters which the members of the Board may consider pertinent or relevant to the general scope of the inquiry.

The Provincial Governments have been requested to afford to the Board any necessary information and co-operation in the inquiry. All Departments of the Government have been directed to afford to all persons acting under the authority of the Commission and by its direction, all such assistance and co-operation in the inquiry as the Board may desire. The Board of Railway Commissioners for Canada, the Commission of Conservation and all other bodies of like character, under the jurisdiction of the Parliament of Canada, shall co-operate and assist the Board in the proposed inquiry. A report should be made with the least possible delay.

It will be observed that the



SIR HARRY DRAYTON
Chairman Dominion Board of Railway Commissioners



ALFRED H. SMITH
President New York Central Lines
Chairman



SIR GEORGE PAISH
Well-known British Financial Expert

Personnel of the Commission of Inquiry into Canada's Transportation Problems

—Photos by British and Colonial Press.

Commission is directed to make a report on steamship connections on both oceans. Whether or not an inquiry will be made into water transportation and the necessity for further development, also the question of control and the interlocking of our rail and water systems in Canada, has not been touched upon. No doubt this important phase of the question will be looked into.

NEW STEAMSHIP SERVICE.

Line of Steamers to Run from Philadelphia to South American East Coast Ports.

The Transportation Department has just received advice that a new line of steamers will, about October 15th, 1916, establish a service between Philadelphia, Pa., and East Coast South American ports, as follows:—

Montevideo, Uruguay.
Rosario, Argentine Republic.
River Platté ports.
Buenos Ayres, Argentine Republic.
Brazilian ports.

This line will be known as the Philadelphia and South American Steamship Corporation, having temporary offices, care Chamber of Commerce, Widener Building, Philadelphia, Pa.

The Pennsylvania Railroad, 56 King Street West, Toronto, are in a position to secure information as to rates and arrangements for space on the vessels of this line.

IRON AND STEEL ARTICLES.

Proposed Advance in Export Rates, Scheduled to Take Effect October 1st, Postponed.

The proposed cancellation of export commodity rates on iron and steel articles from Canadian and American producing points to Atlantic ports, scheduled to take effect October 1st, 1916, has been postponed.

The supplements cancelling the rates from Canadian producing points to the Canadian Atlantic seaboard were on an application of the Association, made on behalf of interested members, postponed by order of the Board of Railway Commissioners for Canada, No. 25453, September 22nd, 1916, pending a hearing on a date to be fixed by the Board.

On September 29th, 1916, the Interstate Commerce Commission on complaint of manufacturers of iron and steel articles west of Pittsburg, postponed to January 29th, 1917, the proposed cancellation (scheduled to take effect October 1st, 1916) of commodity rates applying from producing points, Pittsburg, Buffalo and west, to American Atlantic ports for export, hearings to be held in the meantime.

This action means that the iron and steel commodity rates from American and Canadian producing points to the Atlantic seaboard for export, which have been in effect for some years, will remain in effect until at least January 29th, 1917.

THE QUEBEC BRIDGE DISASTER



The Centre Span being floated up the River at Daybreak



Scene as the Pontoons floated away from the Suspended Span

RAILWAY FIRE PROTECTION.

In times past, the railways of Canada have been charged with being the most important single source of forest fire damage. That this charge can no longer be justly made has been proved conclusively by the results of the present season. Reports received by the Fire Inspection Department of the Railway Commission show that, with very few exceptions, the Dominion chartered railways have faithfully observed the requirements relative to fire protection imposed upon them by the Board. Notwithstanding the exceptionally dry season, practically no serious forest fires have occurred which could be attributed to railway agencies. It is true that numerous fires have started, resulting unavoidably from the operation of trains, but the records show that, in general, the railway employees have been prompt in discovering, reporting and extinguishing them before they did material damage.

Especial care has been taken by the companies in keeping the fire-protective appliances of engines in good order; also much has been done in disposing of inflammable debris on rights of way, notwithstanding the extreme difficulty of securing labor. This work prevents the rapid spread of fires and facilitates prompt extinguishment. Special patrols have been maintained in forest sections, supplemented on all lines by the observance of special instructions to all regular employees relative to the reporting and extinguishing of fires in the vicinity of the track.

Not only have the railways efficiently handled their own fires, but they have extinguished or aided in extinguishing many fires that originated at a distance from the track, due to outside agencies.—*Conservation.*

TRADE ENQUIRIES

These enquiries come into our hands from various sources. The Weekly Bulletin of the Department of Trade and Commerce, from which the enquiries indicated in the sub-heading allotted to them are taken, should be read regularly by those interested in foreign trade. It will be sent free on application to the Department at Ottawa. The names connected with all those enquiries can be furnished direct from the Commercial Intelligence Department, Canadian Manufacturers Association, Toronto.

DOMESTIC TRADE ENQUIRIES.

568. **Wooden Spoons.**—A Montreal house would like to get in touch with manufacturers of wooden mustard spoons.

569. **Paper Bottle Wrappers.**—A large Western house is having difficulty in obtaining corrugated paper bottle wrappers, and will be glad to hear from parties producing them in Canada.

570. **Electric Fire Alarm System.**—One of our Canadian correspondents has been furnished with blue prints, etc., of an electric fire alarm system manufactured in New Zealand by a responsible firm who wish to have it manufactured for them in Canada. We will furnish the name of our correspondent to bona-fide enquirers.

571. **Safety Appliances.**—A party in the United States controlling the patent on safety appliances for drop press work is desirous of having some manufactured in Canada, and will be pleased to communicate with suitable firms.

572. **Sheet Metal Drag Box.**—The same party also controls a sheet metal drag box for use in machine shops, etc.

573. **Iron Tubing, Seamless Brass Cased.**—A correspondent has a quantity of 1¼ in. tubing, and also some 7-16 in. tubing, English make wrapped, which will be disposed of at a reasonable price.

IMPORT TRADE ENQUIRIES.

574. **Oils and Chemicals.**—A well-known English house sends quotations on lanoline, oleine, pine oil, tar oil, etc., which we will be pleased to give to anyone interested.

575. **Sulphuric Acid Machinery.**—A well-known French house, controlling special process for the manufacture of sulphuric, is in a position to supply machinery, etc., required for the production of sulphuric acid, conditional on obtaining supplies of the sulphuric produced.

EXPORT TRADE ENQUIRIES.

576. **Ferro Molybdenum.**—We have the name of a party who is interested in exporting ferro molybdenum, 80 per cent. molybdenum, if any quantity is offering.

577. **Woodenware, Hardware and Small Tools.**—A well-known agent in London is desirous of representing Canadian manufacturers of these lines, particularly in novelties and specialties, in England, and will gladly communicate with anyone interested.

578. **Flour, Lard, Cheese, Etc.**—A correspondent in Mexico, who claims to make considerable cash purchases in the United States, is interested in obtaining quantities of the above named and other food products from Canadian manufacturers.

579. **Oil Well Drilling Machines.**—A New York house is interested in exporting drilling machines to Russia, if they can obtain the rotary system of water and mud flush. We will be glad to supply the name of the enquirer to any company making machines of this type.

580. **Aviation Engines.**—The United States representative of an English engineer would like to hear from Canadian manufacturers who would be prepared to go into the manufacture of aviation engines prepared from the drawings of a prominent English company. It is stipulated that only Canadian companies will be considered.

581. **Small Farming Tools, Hardware, Etc.**—A very well-recommended commission agent in Australia, who offers references as to financial stability, etc., would like to represent a number of Canadian firms in the above named and allied lines.

582. **Canned Meat and Salmon.**—A London correspondent having a market for very large quantities of canned meat in 10-ounce cans for the next twelve months; also canned salmon in 1-lb. cans, wishes to get into immediate touch with Canadian manufacturers able to quote.

583. **Files and Rasps.**—A Sheffield firm are in the market for Canadian-made files and rasps.

584. **Linseed Oil Cake.**—A London firm wish to get into touch with firms in Canada manufacturing linseed cake.

EXPORT TRADE ENQUIRIES TAKEN FROM THE WEEKLY BULLETIN OF THE DEPARTMENT OF TRADE AND COMMERCE.

1040.-585. **Cotton Duck Bags for Flour.**—A well-established firm of manufacturers' representatives would like c.i.f. prices Buenos Ayres, from Canadian mills for flour bags, size 73 by 58 centimetres; must weigh exactly 250 grams. Sample may be inspected at the Department of Trade and Commerce, Ottawa. Business to be on a cash basis.

1041.-586. **Overalls.**—A wholesale and retail dry goods firm in Newfoundland desires to be put in touch with Canadian manufacturers of men's suits, bearing union label, and suitable for engineers, carpenters, etc.

1044.-587. **Asbestos Fibre.**—A British firm of contractors in Buenos Ayres require prices f.o.b. on asbestos fibre for the manufacture of shingles. Particulars as to packing and the probable cost of freight at the time of writing should be supplied. Sample may be inspected at the Department of Trade and Commerce, Ottawa.

1058.-588. **Jewellery.**—A Dundee firm would be pleased to receive catalogues and prices on cheap class of jewellery as sold by departmental stores.

1068.-589. **Spent Liquor from Sulphide Wood-Pulp Process.**—A Sheffield firm makes inquiry as to obtaining supplies of the above from Canada. They use 100 tons annually of a specific gravity of 60 twaddle, shipped in 50-gallon oak casks.

1085.-590. **Preserved Fruit.**—Canadian exporters of preserved fruit are inquired for by a wholesale firm in Newfoundland.

1088.-591. **Formaldehyde.**—A North country firm asks for the addresses of Canadian manufacturers of formaldehyde.

1091.-592. **Wire Mesh, Gauze and Sieve.**—A Buenos Ayres firm of wire mesh, gauze and sieve manufacturers is open to receive quotations for bent beechwood for sieve making. Sample and further particulars can be obtained by application to the Department of Trade and Commerce, Ottawa.

1100.-593. **Asbestos Millboard.**—A Carlisle firm inquires for asbestos millboard samples and quotations.

1117.-594. **Box Shooks.**—A Cape Province firm of dried packers asks for quotations on box shooks:—

Thirty-five thousand annually: Tops and bottoms, 2 pieces, 15½ by 9⅝ by 5/16; sides, 2 pieces, 15½ by 5½ by 5/16½; ends, 2 pieces, 9 by 5½ by [illegible].

Fifteen thousand annually, same sizes as above, except depth, which is 6¼ inch instead of 5½ inch. All boxes used have the weight and contents printed on the sides. Sample boxes and printing required are in possession of the Department of Trade and Commerce, Ottawa.

Condensed Advertising

SALESMAN WANTED.

A Canadian Manufacturer with an established trade desires to secure the services of an energetic salesman who can devote all his time to the business, for Toronto and territory which can be covered from there. Should have some knowledge of electricity and an acquaintance in the electric trade. Work will be on the road half or three-quarters of the time. Man from thirty to forty, citizen of Canada, and married preferred. Energy and selling ability are of more importance than engineering knowledge. Give full particulars in your first letter and state value you place on services.—Box 44, INDUSTRIAL CANADA, Toronto.

POSITION WANTED.

Business connection desired where salesmanship, executive ability and experience in correspondence are essential. 25 years' active experience. Excellent habits; satisfactory references. Address Box 44, INDUSTRIAL CANADA, Toronto.

ADDITIONAL LINE WANTED.

We Sell Wholesale and Retail Grocery and Hardware Trade. Have five travellers. Want attractive line to introduce or push.

DUSTBANE MFG. CO., LIMITED,
OTTAWA, ONT.

AGENCIES WANTED

The undersigned is open to represent one or two responsible manufacturers in the City of Hamilton on a commission basis. Has extensive acquaintance with the general manufacturing interests of the city, and can furnish excellent references.

Address, **CHAS. A. MURTON,**
34 King William St., Hamilton, Ont.

Former Secretary Hamilton Branch
Canadian Manufacturers' Association.

The Most Economical Roofing in the World

NEPONSET Paroid ROOFING

Paroid roofs laid over 18 years ago on factories and other buildings are still giving satisfactory service. Paroid roofs such famous factories as Ford Motor Car Co., Wrigley Spearmint Gum, Canadian Westinghouse Co., Russell Motor Co., and many others.



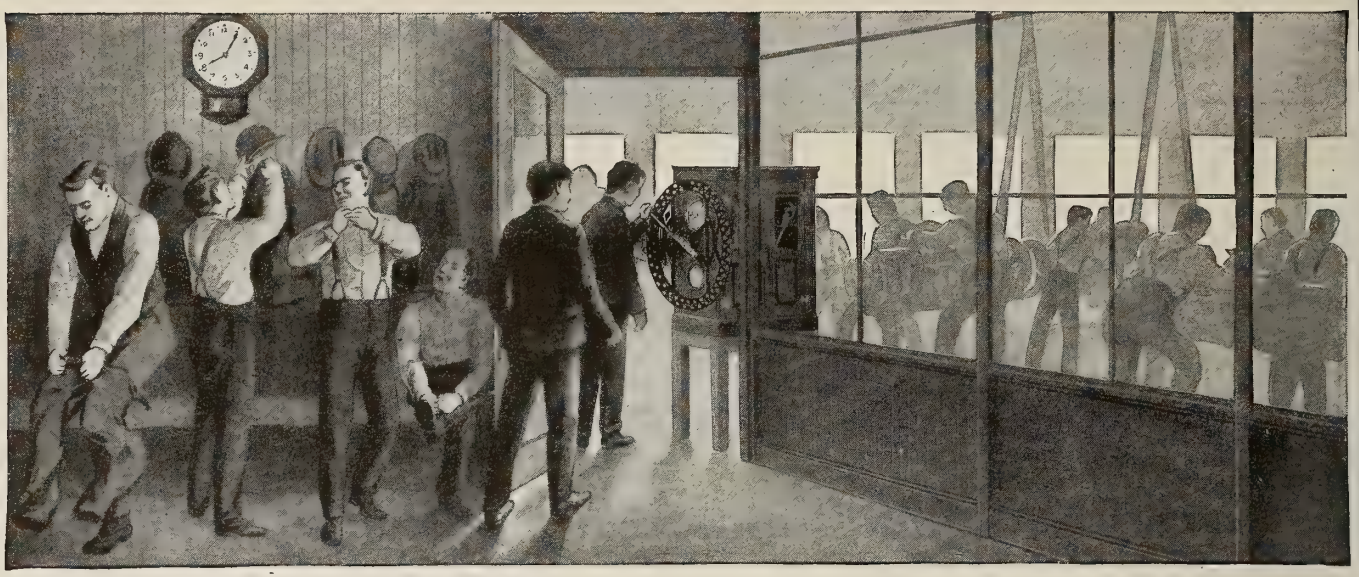
Look for the Paroid Roll

Not only should you specify and order Neponset Paroid Roofing, but familiarize yourself with this roll so that you can be sure you get the genuine article. For prices, etc., on Paroid, Neponset Twin Shingles and Wall Board, write to

BIRD & SON
Dept. I Hamilton, Ont.

Warehouses:
Vancouver, Calgary, Edmonton
Winnipeg, Montreal, St. John

The Largest Manufacturers of Roofings, Wall Boards and Roofing Felts in Canada.



They are starting to work at 8.06 a.m. Alright, don't worry, SO DOES THEIR PAY!

Loafing around in the halls and dressing rooms is bad—yes—it should be checked. But in the meanwhile see that it doesn't cost you any real money. Putting a Time Recorder at the factory door may not be enough—put one at each department door and so make another successful assault on your arch-enemy "overhead expense."

INTERNATIONAL TIME RECORDERS

Are built in all styles to suit any business. The Dial Recorder is fast and hard to overload. The Card Recorder suits many businesses best. The Cost Recorder, showing the actual, chargeable working time on individual jobs, is just the thing for others.

We are the largest makers of Time Recorders in the world, and our experience and advice in safeguarding pay-rolls and cost expenditures is extensive and valuable. Why not use it—FREE?

Write us to-day, state nature of business, and number of employees, and we'll advise you what kind of Time Recording system to install.

International Time Recording Company of Canada, Ltd.

Toronto: Anderson St. F. E. MUTTON, General Manager Montreal: W. A. WOOD, Jr., Sales Agent Cartier Bldg., Cor. McGill and Notre Dame Sts.

Winnipeg: GEO. MORRIS, Sales Agent, 287 Donald St.



"What! on the street at 12 o'clock"

Yes, sure enough—"well, but, what time did they leave off work?"

Oh, maybe a few minutes before twelve—what's a few minutes between friends? "Yes, but—time is money—and my workmen are getting almost double rates now-a-days." Of course they are—and if you don't have a mechanically efficient

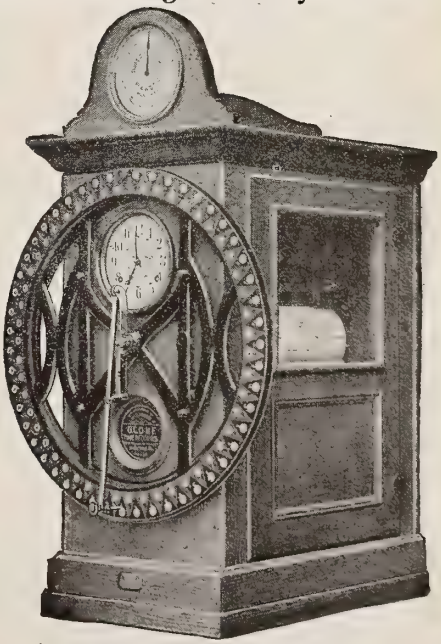
INTERNATIONAL TIME RECORDER

on the job, watching your interests four or six times a day on the In and Out shifts, you'll find your profit margins being absorbed in an ever-increasing and mysterious "overhead" that you can't put your hands on.

The first place to check cost-leaks is in the use of raw materials you buy and labor-time is the greatest of these raw materials.

The vast bulk of the world's employers entrust their pay lists to International Time Recorders—because IT PAYS them to do so.

We have International Time Recorders that will suit ***your*** business exactly. Write us for folders and price lists.



An International Dial Recorder.
Prices as Low as $85

International Time Recording Company of Canada, Ltd.

Toronto: Anderson St.

F. E. MUTTON, General Manager

Montreal: W. A. WOOD, Jr., Sales Agent
Cartier Bldg., Cor. McGill and Notre Dame Sts.

Winnipeg:
GEO. MORRIS, Sales Agent, 287 Donald St.



"We are protecting this steel work RIGHT"

"WE are using the same paints in this building of yours that were used on the Pennsylvania Station, the Metropolitan Tower and the Hell Gate Bridge in New York. They are the greatest steel preservatives ever invented, and are known as

TOCKOLITH AND **R.I.W.** (REMEMBER IT'S WATERPROOF)

THE PATENTED CEMENT PAINT — DAMP-RESISTING PAINT

Tockolith, in drying, liberates lime and in this way deposits a hard cement coating on steel. It combines with incipient yellow rust when present, stopping further oxidation.

Tockolith and a finishing coat of R. I. W. Damp-Resisting Paint keep steel work in perfect condition.

Write for Tockolith Booklet from Dept. 55.

Manufactured in Canada by

R. I. W. DAMP-RESISTING PAINT CO.
TOCH BROTHERS

Gerrard St. and Carlaw Ave.
TORONTO, ONTARIO, CANADA

AMONG THE INDUSTRIES

Under this heading are published items of news of current interest concerning the activities of Canadian manufacturers. Information about changes of interest, enlargement of plants, and plans for future developments are always welcome, and are published free of charge, provided they should not be properly classified as advertisements.

***Items prefixed with an asterisk are based on official information received in each case from the companies mentioned. Other items, while secured usually from reliable sources, have not the same authoritative origin.**

ALBERTA.

Peace River Crossing.

Tenders will be opened very shortly for the erection of a warehouse and storage tank for the Imperial Oil Company. Approximate cost, $10,000.

BRITISH COLUMBIA.

New Westminster.

The Dominion Cedar and Shingle Company will erect a new shingle mill.

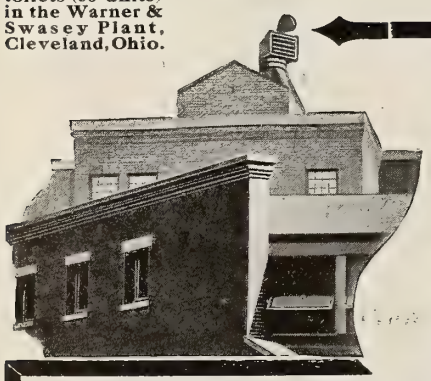
The Western Marine Railway Company has commenced work on the new shipyards on Poplar Island. The plant will cost about $80,000.

Vancouver.

George F. Whalen has completed financial arrangements with Eastern Canadian associates for the opening of great pulp limits at Quatsino Sound and Swanson Bay, in addition to the present works of his company at Howe Sound. A new plant will be opened at Swanson Bay with a capacity of 30 tons of fibre daily.

Showing 48-inch Ormsby-Swartwout Ventilator, ventilating 6, stories of factory toilets (58 units) in the Warner & Swasey Plant, Cleveland, Ohio.

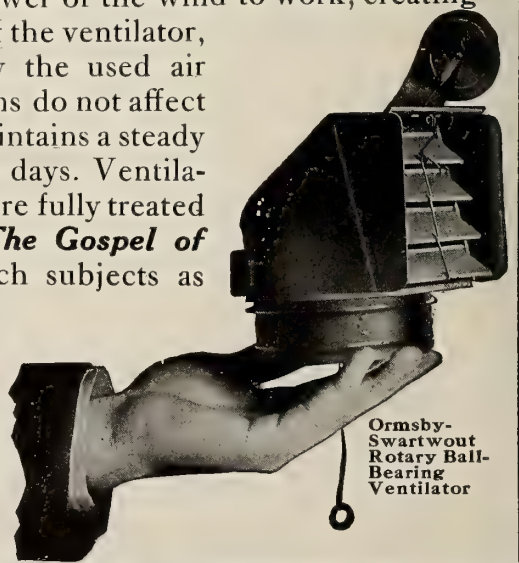
THIS VENTILATOR
SOLD 20 MORE



SIX years ago a single Ormsby-Swartwout Ventilator was installed on this plant. Since then they have installed twenty more ventilators as a result of the "pulling power" of their first Ormsby-Swartwout.

In the Ormsby-Swartwout Ventilator, "pulling power" is an actual fact. It puts the free power of the wind to work, creating a vacuum before the mouth of the ventilator, which is continually filled by the used air below. Temperature conditions do not affect it—the Ormsby-Swartwout maintains a steady flow of air even on the hottest days. Ventilation and ventilation problems are fully treated in our 24-page handbook ***"The Gospel of Fresh Air."*** It takes up such subjects as fresh air and labor output, ventilation and workers' errors, the semi-mechanical principle, exact specifications, list of users, etc. It's free to you on request. Give name of company and writer.

Ormsby-Swartwout
Rotary Ball-Bearing
VENTILATORS



Ormsby-Swartwout Rotary Ball-Bearing Ventilator

A. B. ORMSBY CO., Limited
TORONTO

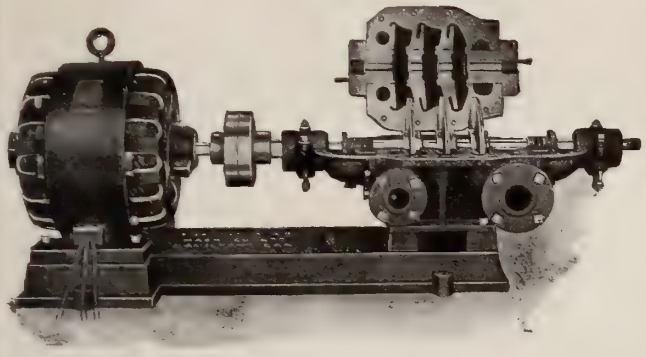
Associated with the Metal Shingle & Siding Co., Ltd., Preston, Montreal, Winnipeg

Steam and Power Pumps

VERTICAL AND HORIZONTAL

CENTRIFUGAL PUMPS

FOR EVERY SERVICE



When next in the market, submit your specification to us.

The Smart-Turner Machine Co. Limited

HAMILTON, CANADA

"Metallic" Building Materials

Get Your Buildings in Shape for Winter



Re-enforce the walls—smarten up the interiors—make use of "Metallic" Ceiling and Siding Plates and our "Empire" Corrugated Iron. They make time-proof and fire-proof buildings. Big stocks, prompt shipments.

The Metallic Roofing Company, Limited

Manufacturers of

"Eastlake" Shingles, Ventilators, Trough and Pipe, etc.

Toronto, Ontario



T H-E

Is Labor Scarce?

Many manufacturers find labor supply fluctuates greatly from day to day—almost from shift to shift. In such cases the flexible Hydro current is especially useful, as it can be turned on or off from a department or a machine—at will.

Use Hydro because it gives you "the best service—at cost."

We are at the other end of your telephone wire.

Toronto Hydro-Electric System

226 Yonge St. **Phone Adel. 2120**



The "Famous Five" Files

are cut from special steel, made to our own formulas, which formulas have proven best after years of investigation and practical experience.

The "heat treatment" of the steel differs for various grades of Files, and the teeth are especially adapted to the kind of work they are intended for. Among the "Famous Five" there is an exact type of File for your grade of work. Specify it when you order.

The "Famous Five" are:

Kearney & Foot
Great Western
American
Arcade
Globe

(MADE IN CANADA)



(DEALERS EVERYWHERE)

The Alberta Lumber Company has been granted a permit for the erection of a lumber mill, to cost $100,000.

The ironworks at Bridgeport were destroyed by fire recently. The loss is estimated at $12,000.

The Wailamette Iron and Steel Works have registered to carry on business in the province of British Columbia. The head office of the company is situated at 1104 Standard Bank Building, Vancouver.

Fire destroyed the works of the Pacific Steel Products, Limited, near Eburne, on September 10. The industry, formerly the Dominion Safe Works, was purchased some time ago by a number of Vancouver capitalists and represented an investment of over $110,000 for machinery alone. The plant had just started operation this summer and had a large number of contracts on hand.

NEW BRUNSWICK.

Bathurst.

Bathurst, N.B., which recently installed a new water system, is now to have a flour mill. It will be operated by the George Eddy Company. The buildings are now being erected. In addition to grinding home-grown wheat, it will be used for grinding western grain.

NOVA SCOTIA.

Halifax.

A meeting of the shareholders of the Nova Scotia Car Works, Limited, which has been liquidated by the creditors, has been called. It is understood that a proposition will be made to them on behalf of the purchaser of the property, who was F. B. McCurdy, M.P. A new company with $400,000 stock may be formed.

ONTARIO.

Acton.

The Reliance Shoe Company, 350 Sorauren Avenue, Toronto, proposes to build a factory estimated to cost $10,000, if the by-law to grant them a free site and loan is passed.

Belleville.

The Maple Leaf Tires, Limited, 40 Bridge Street, have commenced the erection of a factory estimated to cost $100,000. The President, H. C. Long, 605 Traders Bank Building, Toronto, superintends construction, and is receiving tenders on supply of materials, including steel sash, steel roofing, iron reinforcing bars and water tank.

BRYAN PONTIFEX
CHARTERED ACCOUNTANT

Factory Accounting a Speciality

EXCELSIOR LIFE BUILDING
TORONTO STREET
TORONTO

Phone Main 1327

THE NICHOLS CHEMICAL COMPANY, LIMITED

MANUFACTURING CHEMISTS

HEAD OFFICE: 222 ST. JAMES STREET, MONTREAL

Branch Office—120 Mill Street, Toronto

WORKS: Capelton, Que., Sulphide, Ont., Barnet, B.C. WAREHOUSES: Montreal, Toronto

Sulphuric Acid	Sulphate Soda	Glauber's Salt	Bleaching Powder
Muriatic Acid	Sulphide Soda	Blue Vitriol	Tri-Sodium Phosphate
Nitric Acid	Hypo-Sulphite Soda	Sulphate Alumina	Ammonia
Hydrofluoric Acid	Bi-Sulphite Soda	Papermaker's Alum	Salt Cake
Mixed Acid	Phosphate Soda	Caustic Soda	Tin Crystals

Agents for Baker & Adamson's Chemically Pure Acids and Chemicals

AGENTS FOR CANADIAN SALT CO.—"WINDSOR" BRAND CAUSTIC SODA & BLEACHING POWDER



$141,017.00 worth of abrasive wheels imported into this country in the last fiscal year, that should have been "MADE IN CANADA."

We can furnish the Canadian made goods of the best natural and artificial abrasives, by the vitrified or silicate process; in the latter, with or without the wire web.

Can be obtained from the following supply houses:

J. R. BAXTER & CO., LTD. Montreal
H. W. PETRIE LTD. Toronto
McDOUGALS LTD. Ottawa
COWAN HARDWARE CO. London
WALKERVILLE HDW. CO. Walkerville
NORTHERN CAN. SUP. CO. Cobalt

Or direct from the manufacturers,

DOMINION ABRASIVE WHEEL CO., LTD.
NEW TORONTO. ONT. CANADA

TANKS

FOR PULP AND PAPER MILLS, CHEMICAL WORKS, OIL REFINERIES, ETC.

STEEL STRUCTURES

TO SUPPORT TANKS

WRITE FOR QUOTATIONS

MacKINNON, HOLMES & COMPANY, LIMITED

SHERBROOKE, QUEBEC

JULIUS COHEN & JOSEPHY

Foreign Domestic **WOOL** *Noils, Wastes and Shoddy*

Also operating THE YORKSHIRE WOOL STOCK MILLS, TORONTO

Manufacturers of Pulled Shoddies

H. V. ANDREWS Canadian Representative 13 Church St., Toronto

Espanola.

It is understood that the Spanish River Pulp and Paper Company are considering the erection of a sulphite plant here, which will have a capacity of 70 tons.

Fergus.

Beatty Brothers, Limited, are making a large addition to their plant here. The contract was let on Labor Day for a new factory to be built parallel to the present factory on Hill Street. The intention of the firm is to take all the iron-working machinery from Grand River factory in Fergus and install it in this new plant. Churns and washers, which have hitherto been made in London, will now be made in the Grand River plant, which is being enlarged by a three-story addition. This is now almost completed and ready for the wood-working machinery, with which it will be completely filled. Plans are now under way to erect about fifty new houses in town to provide for workmen to be employed in the new plant.

Fort William.

Contract has been let for the erection of a factory for the Canada Starch Company, 164 St. James Street, Montreal.

Galt.

The Galt Paper Box Company, King Street, have started work on an addition to their plant.

Georgetown.

Harley-Kay, Limited, knitting-machine builders, have recently acquired the machine business and plant of the Georgetown Foundry and Machine Company. New buildings will be erected at once to accommodate the growth of the Harley-Kay business and for the manufacture of additional lines. They report an increase in sales to July 1st of over 100 per cent. The extensions will represent an investment of $15,000.

Guelph.

At a meeting of the directors of the Standard Tire and Rubber Company, held in Guelph, the sale of the plant and also the lease was ratified, giving the Partridge Rubber Company, of Montreal, possession of the plant. The Partridge Company are preparing to install machinery now in use in their Montreal factory.

A contract has been let for the erection of an addition to the mills of the Dominion Linens, Limited, at an approximate cost of $10,000.

Hamilton.

A contract has been let for the erection of a factory for the Dominion Steel Castings, Depew Street. Approximate cost is $75,000.

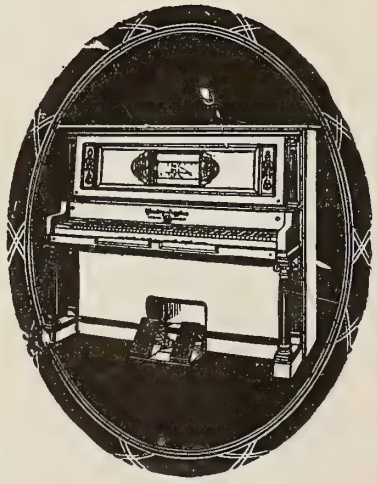
Addition to the factory and improvements to the offices and salesroom of the H. Barnard Stamp and Stencil Co., 24 Gore Street, are being made at a cost of $5,000.

The general contract for the erection of an addition to the premises of the Frost Wire Fence Company, Sherman Avenue, has been awarded. Approximate cost, $4,000.

The project for the construction of a coke oven plant for the Hamilton By-Products Coke Ovens, Limited, Sun Life Building, has been deferred until next year.

Men forget business cares in the enjoyment of

Gourlay-Angelus
Player-Pianos



A GOURLAY-ANGELUS provides ANYONE with the ability to play ANY music artistically.

In the opportunity for recreation thus afforded, many busy men find enjoyment hitherto undreamed of, as well as a complete rest from the business worries and cares of the day. If you find it hard to leave these cares behind you when you go home, depend upon it, a Gourlay-Angelus will make you forget them.

One Toronto manufacturer tells of this pleasure in a Gourlay-Angelus as follows:—"I have always been glad I purchased the Gourlay-Angelus. The longer I have it the more I enjoy it and the more I use it."

Write for Catalogue and Prices

GOURLAY, WINTER & LEEMING,
188 Yonge St., Toronto



Walls, white or covered with foliage paper, with blue or grey predominating; woodwork white; rugs, plain dark blue centre with floral border; hangings dark blue; pictures, eighteenth century sporting prints or reproductions of Gainsborough, Reynolds or Romney.

A Chippendale Dining Room Suite

By the Toronto Furniture Co., *Limited*

"MANY A THING DIVINELY DONE BY CHIPPENDALE AND SHERATON."—Andrew Lang.

OF ALL furniture, that made by Chippendale is surely the most beautiful and practical. Beautiful because of its delicate carving, graceful curves, perfect proportions and soft, deep-toned coloring; practical because in everything pertaining to design, Chippendale subordinated all other elements to that of structural stability. ¶ In our replicas of Chippendale furniture, we have reproduced with fine sympathetic feeling and admirable skill the beautiful decorations, simple chaste lines, perfect proportions, and clear luminous finish that make the originals so delightful. ¶ The very simplicity which you admire in this Chippendale suite enables us to produce it at a price at least no higher than that demanded for ordinary furniture, lacking its distinction of style and finish. We invite you to view this and other notable periods in our line at the leading dealers in your locality.

STRUCTURAL DETAILS

Sideboard—25 in. x 66 in. Has five drawers and three velvet-lined trays for table silver. May be had with or without mirror back. All drawers have dust-proof bottoms. *Table*—54 in., 8 or 10 ft. extension. *China Cabinet*—May be had with or without drawers. *Serving Table*—22 in. x 43 in. *Chairs*—Upholstered in leather or tapestry. *Wood*—Mexican mahogany, finished in antique, rubbed to a dull egg-shell gloss.

Look for the Shop Mark inside the drawer.



TORONTO FURNITURE CO., LIMITED

Show Rooms and Cabinet Shops: 163-187 Dufferin Street, Toronto, Canada

Kitchener.

There are two recent changes to report consequent on the change of name from Berlin to Kitchener. They are as follows: Berlin Furniture Co. to Jacques Furniture Co.; Berlin Suspender Co. to Kitchener Suspender Co.

The general contract for the erection of a warehouse for the Canadian Oil Company has been awarded.

London.

The Middlesex Mills, 1115 Dundas Street, have let the general contract for the erection of a dry kiln.

The McClary Company is preparing plans for an addition to its factory here to cost $40,000. The manager is W. N. Gartshore.

The H. S. Hall Company, of Jersey City, have opened factory premises here. The company proposes building a factory in the spring at a cost of $25,000. Chas. Phillips, of Toronto, represents the company.

Merritton.

General contract has been let for the construction of an addition to the plant of the Lincoln Paper Mills, at an approximate cost of $200,000.

New Toronto.

The new extrusion mill for the manufacture of brass rods and shapes, which has been under construction by Brown's Copper and Brass Rolling Mills, Limited, has been completed. It has a capacity of 2,000,000 lbs. per month. A new sheet rolling mill, which will increase the firm's output by 100 per cent., is also under way.

Niagara Falls.

A by-law has been carried granting certain exemptions to the Perfection Tire and Motor Company, Limited, of Canada, 713 Marquette Building, Chicago, and a site will be secured for the erection of their plant. Approximate cost, $35,000.

Contract for electrical work required in connection with the foundry which has been built for the Pollard Manufacturing Company has been let.

Port Colborne.

Contract has been let for foundations required in the construction of a refinery for the International Nickel Company, 43 Exchange Place, New York. The approximate cost of buildings is $3,000,000.

Renfrew.

The general contract for the erection of an addition to the premises of the Renfrew Textile Co., Limited, has been let. The approximate cost is $10,000.

St. Thomas.

On September 16th fire destroyed the buildings of the St. Thomas Dehydration Company, Limited. The loss is estimated at $40,000; insurance, $15,000. The buildings of the Canadian Woodenware Co., Limited, were also destroyed, the loss being $10,000; insurance, $2,500.

Simcoe.

Contracts have been let in connection with the factory now being built for the Unique Shoe Company.

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Hammer Brand Plaster of Paris

Manufactured for Half a Century—the Standard of Excellence

CALCINED PLASTER · ALBERT MANUFACTURING COMPANY · HAMMER TRADE MARK BRAND 1854 · HILLSBOROUGH, NEW BRUNSWICK

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Its Surface Covering Capacity
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WILL NOT BECOME WATERSOAKED

Made of Fibreware, Moulded and Hardened under enormous hydraulic pressure and Baked at extreme heat.

The Finished Article gives almost everlasting wear.

WE do not advise You to under-insure your property, but we say that if Eddy's Round-Bottomed Fire Pails are part of your Fire-fighting equipment you will likely get a lower rate than you otherwise would have done.

EDDY'S Fibreware Fire Pails are made with a specially constructed Rounded Bottom so that they must be stood or hung in Racks where everybody in the Factory or Mill knows where to find them when necessary.

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Paper Mill Agents——Merchants——Mill Supplies

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Steam Plants: PROTECTO and PROTECTOCOAT will cut your fuel bill 25 to 50%, and not pollute steam. Let us quote you on your paper wants, and send you our Boiler Preservative Booklet—it will pay!

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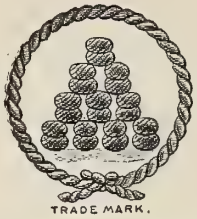
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Special Woodworking

Garnet Paper and Cloth

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106-118 Atlantic Avenue

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TORONTO



Manufacturers of

TWINES
COTTON AND JUTE ROPE
MILL & SPINDLE BANDING, etc., etc.

Strathroy.

The Wright Piano Company, Oxford Street, proposes to build an addition to its premises, at an estimated cost of $4,000.

Teeswater.

The Toronto Lime and Plaster Company will build a plant here to cost about $35,000.

Tillsonburg.

The Maple Leaf Harvest Tool Company has decided to go ahead with a number of additions to its plant. A new storage wareroom is planned and will be erected at once.

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Made in Canada

HYDRAULIC PRESSES, PUMPS AND ACCUMULATORS

Forging, Nosing and Marking Presses for all Size Shells
Presses for General Purposes

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CANADIAN TUBE & IRON CO., LIMITED
MONTREAL, CANADA

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WROUGHT PIPE BLACK AND GALVANIZED 1/8 TO 4 INCH

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Also BOLTS, NUTS, RIVETS—All Kinds

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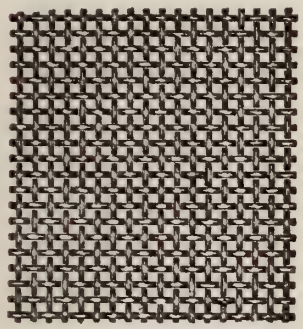
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BAR IRON AND STEEL

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HAMILTON - - CANADA



Manufacturers of **Double Crimped Wire Cloth and Wire Screening** for all purposes of Iron, Brass, Copper, Bronze, Galvanized and Tinned Wire, etc.

There is no kind of Wire Fabric required in the production of any machine or manufactured article that we cannot furnish.

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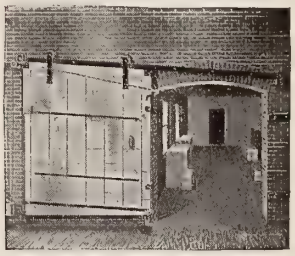
Bank and Office Grilles and Ornamental Iron Work in all finishes.

Wire Guards for Factory Windows, Moulders' Riddles, Laboratory Testing Sieves, Steel Factory Stools and Metal Lockers.

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Parallel Door Hardware



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Save Money on Your Factory Transportation



BULLDOG STEEL JOIST HANGERS
They never let go! Stronger than malleable

"R-W" HANGERS and Carrier Systems are specified by leading architects and engineers throughout Canada and the United States. Catalogues and estimates will be cheerfully furnished.

Richards-Wilcox
CANADIAN COMPANY, LTD
LONDON, ONTARIO.



"R-W" Trolleys are best for all sliding doors



We manufacture Babbitt Metal for every purpose.

Our XXX Genuine Arctic
is especially adapted for
Heavy Duty Work
such as Marine and Automobile Engines.

Tallman's Special
For General Machinery Bearings.

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Sheet, Ingot, Rod, Wire, Tubing, Rivets, Extruded Shapes, Bronze Powder and Fabricated articles.

We solicit your enquiries and will be glad to serve you. Our experience and knowledge of the metal will be of value to you.

Write Us

NORTHERN ALUMINUM CO., LIMITED



Made in Canada *From British Stock*

"GENUINE OAK"

LEATHER BELTING

"D.K."

BALATA BELTING

Guaranteed to Give Satisfaction

D. K. McLAREN LIMITED

TORONTO MONTREAL ST. JOHN, N.B.

847 Beatty Street, VANCOUVER

Engineer's Supply Co., 123 Bannatyne Ave. E., WINNIPEG

Toronto.

Bryant Paper Company, Kalamazoo, Mich., plans pulp mill at Toronto at an estimated cost of about $1,500,000.

The Queen Hat Manufacturing Company, 82 Bay Street, plans factory to cost $75,000.

Plans have been prepared for the erection of a manufacturing plant of concrete construction for the Canada Metal Company, 33 Fraser Avenue. Estimated cost, $25,000.

Tenders have been received on the erection of an addition to the premises of Chas. Bush, Limited, 105 Davenport Road. It is estimated to cost $4,000.

The Massey-Harris Company have commenced the erection of a storehouse and addition, concrete and brick construction, to cost $3,300.

The Synthetic Drug Company are extending their business operations, and for this purpose have taken out a charter under the name of Diarsenol Co., Limited. The new company will look after the export business.

Welland.

The Electro Steel and Metals, Limited, will build an extension to their foundry at a cost of about $10,000.

Windsor.

The Maxwell Motor Car Company expects to start shortly on the erection of a plant to cost $60,000. A site was purchased from the city last spring.

The Windsor Lumber Company are building a large addition to their mill on Cameron Avenue.

633-661 EASTERN AVENUE



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The Largest Patent Leather Manufacturers in the British Empire

A. R. CLARKE & CO., LIMITED

MONTREAL TORONTO QUEBEC



Cut of 60-inch "Extra" Double Belt
Made by The J. C. McLaren Belting Co., Limited.

WE ARE HEADQUARTERS FOR ALL KINDS OF

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ESTABLISHED 1850.

DID YOU EVER NOTICE

that jarring, grinding noise in your machine shop caused by the metal gears?

Wouldn't you like to stop that noise? You can do it by using

NEW PROCESS GEARS
RAWHIDE PINIONS

They last indefinitely too.

Ask us about it.

R. GARDNER & SON, LIMITED

Nazareth, Brennan and Dalhousie Streets
MONTREAL

Economy and Accuracy
IN SCREW THREAD GAGING

The upper contact points are set to the maximum size—the lower to the minimum. Lay the screw between the upper points and let it "find its own level." Can anything be simpler?



JUST RIGHT

Varying judgment of individual workmen is entirely eliminated by the use of

WELLS LIMIT GAGES

Send us an outline of your requirements. We will plan the gages for your output.

Wells Bros. Company of Canada, Limited
GALT - ONTARIO
Manufacturers of the celebrated *Little Giant* line of
TAPS, DIES and SCREW PLATES, GAGES AND REAMERS

QUEBEC.

Granby.

A factory is being built for the Granby Elastic Web by day labor under supervision of the President, Ernest Boivin. The approximate cost is $25,000.

Montreal.

Contract has been awarded for the erection of an addition to the factory of Johnson & Son, Limited, at an estimated cost of $7,000.

Contract has been awarded in connection with the factory which is being built for A. McArthur and Company, Limited.

St. Jerome.

Contracts have been let in connection with the mill now in course of erection for the Regent Spinners, Limited.

Contract for roofing has been let in connection with the factory which is being built for the Canadian Consolidated Rubber Co., Limited, 950 Notre Dame Street East, Montreal.

Sherbrooke.

The Canadian Ingersoll-Rand Company will build a large addition to their machine shop.

SASKATCHEWAN.

Estevan.

The Lignite Briquette and Power Company proposes establishing a brick and tile plant. A plant for making briquettes from lignite is also contemplated.

Twist Drills Engine Studs
Cap and Set Screws Semi-Finished Nuts

Customers appreciate our policy of keeping our Screw Machines on their standard work so as not to inconvenience them. Instead of using these Machines to make special work, our special work is manufactured on Machines set aside for that purpose, and in a separate Plant, and this does not interfere materially with our regular output. This enables us to give our regular trade better service and better attention than we could do if we devoted our standard Plant to special work, on which of course we could make larger profits. After the need for the special work has ceased, we know our customers will bear in mind our efforts to serve them during these strenuous times.

John Morrow Screw and Nut Company, Limited
INGERSOLL : ONTARIO


BIG GAME
IN
CANADA
The Finest Hunting
Grounds in America
ARE CONVENIENTLY REACHED VIA
CANADIAN PACIFIC
Particulars from Canadian Pacific Agents or
W. B. HOWARD District Passenger Agent, Toronto.

Canada-South Africa Direct Service

Regular monthly sailings from Montreal in Summer and St. John, N.B., in Winter, calling at Cape Town, Algoa Bay (Port Elizabeth), East London, Port Natal (Durban) and Delagoa Bay in the order named.

Sailings 20th of each month.

All steamers fitted with refrigerators for the carriage of perishable freight.

For rates of freight and other information apply to

ELDER DEMPSTER & CO., Limited

133 BOARD OF TRADE BUILDING - - MONTREAL

Toronto Agent: S. J. SHARP, 79 Yonge St., Royal Bank Bldg

Moose Jaw.

George Harrison, M.E., manager of the Saskatchewan Bridge and Iron Works, proposes to erect a plant here if the City Council will grant a special rate for electric current used in his establishment.

Regina.

The new plant of the Imperial Oil Company is now ready for operation.

Saskatoon.

The Saskatoon Bread Company will erect a new building of brick construction at the corner of First Avenue and Twenty-second Street, at a cost of $15,000.

THE SHINGLE CONTROVERSY.

From time to time INDUSTRIAL CANADA has been in receipt of articles and letters dealing with the merits or demerits of various kinds of roofing material. It is a matter which obviously admits of argument on both sides and consequently provides a subject of debate that may be prolonged indefinitely. For this reason, INDUSTRIAL CANADA does not feel inclined to devote any considerable space to the controversy.

A letter, however, has recently come to hand from the Brunette Saw Mill Company, New Westminster, which aims to answer a rather sweeping indictment of the shingle roof appearing in a recent number, and this, in fairness to the manufacturers of wooden shingles, is reproduced as follows:—

"You quote the *Dallas News* as blaming shingle roofs for the magnitude of a recent conflagration in Paris, Texas.

"Is it quite fair to give such a knock to a very important Canadian industry in favor of a foreign roofing, especially in

THE

New Zealand Shipping Company, Limited

CANADA

TO

Australia and New Zealand

Regular monthly sailings from Montreal in summer and St. John in winter, calling at Adelaide, Melbourne and Sydney (Australia), and Auckland, Wellington, Lyttelton and Dunedin (New Zealand). Sailings 20th of each month.

Through bills of lading issued to all points in Australia, New Zealand, Tasmania and other islands of Oceania.

Marine Insurance effected at rates equal to those given from New York.

For rates and other information apply to

The New Zealand Shipping Co.
LIMITED

213 Board of Trade Building, Montreal

EXPORTERS OF

Reed Organs, Piano Stools, Music Cabinets.

Catalogue B.

The Goderich Organ Co. Limited
GODERICH, CANADA

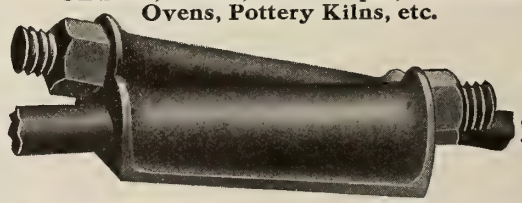
Closet Seats, Flush Tanks, Medicine Cabinets,

Everything for the Bath Room.

Write for Catalogue C. and Price List.

LUGS FOR BANDS

On Silos, Tanks, Water Pipes, Penstocks Ovens, Pottery Kilns, etc.



Ask for Price List

For round Rods $\frac{5}{8}$ to 1$\frac{1}{2}$ inch **Flat Bands 2 to 6 inches wide**

Best Malleable Iron—Prompt Shipments.

OTTERVILLE MFG. CO., LIMITED
OTTERVILLE, ONT.

THE OPPORTUNITY OF
The Western Market

MORE than 134,000,000 bushels of grain of the crop of 1915 have been marketed to date at Canadian Northern Railway points in Manitoba, Saskatchewan, and Alberta.

This season the prospect of a good yield in the vast territory served by the Canadian Northern Railway is again bright.

The price which prevailed during the distribution of the crop of 1915 was high, and the farmer was able to liquidate most of his outstanding obligations. The price for the output of this year should be at least equal to that of last, but the distinction is that the bulk of the funds above expense will be *net* to the producer.

The grain grower along the Canadian Northern should soon be seeking to purchase the commodities which the manufacturer in Eastern Canada can supply. The Canadian Northern is the direct line of communication between the factory and the farm. It reaches practically all points of importance in the prairies through a network of more than 6,000 miles of railway. With flat tracks and easy grades between the east and west, it stands prepared to move your products with safety and despatch *all the way.*

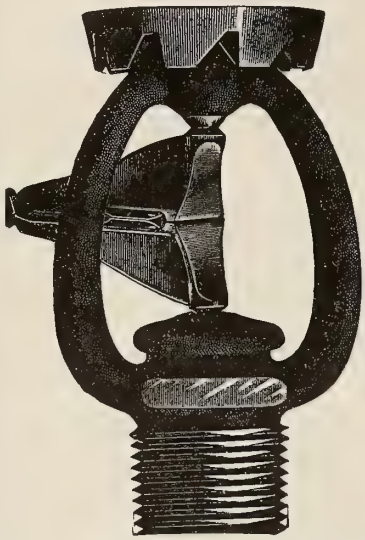
CANADIAN NORTHERN

Test Canadian Northern Service

Principal Offices at: Halifax, N.S.; Quebec, Que.; Montreal, Que.; Ottawa, Ont.; Toronto, Ont.; Port Arthur, Ont.; Winnipeg, Man.; Regina, Sask.; Saskatoon, Sask.; Prince Albert, Sask.; Edmonton, Alberta; Calgary, Alberta; Kamloops, B.C.; New Westminster, B.C.; Vancouver, B.C.; Victoria, B.C.



Hear Us For Our Cause!



We want to equip your plant with

Esty Fire Sprinklers

and show you how to reduce insurance costs 50% to 80%.

IT'S A GREAT BIG MONEY SAVER.

Write:

H. G. VOGEL CO. CANADA LIMITED

169 Duke St., MONTREAL, P.Q.

the face of the fact that there is no fire-resistant roofing worthy the name, within the reach of the average builder, that will come anywhere near the economic value of cedar shingles? In fact, the felt roofings in common use are very inflammable, in addition to being short-lived and unfit to resist severe storms and hail.

"Whereas, shingles when properly laid with rust-proof nails will last from thirty to fifty years. Cedar shingles do not decay but gradually wear down by the action of the rain on the roof. The British Columbia edge-grained cedar shingles do not curl up as suggested in the article referred to, and if the same care is taken with them as with felt roofing, viz.: to cover them with fire-resisting paints, it stands to reason that they will be equally fire-resistant, as a firm wooden roof is going to offer greater resistance to penetration by fire than a flimsy paper or felt usually impregnated with pitch or other inflammable substance.

"Referring to the excellent way in which wooden shingles withstood the effects of the terrific storms which caused such heavy damage in many sections of the South last month, the Birmingham, Ala. *Transcript* says in part:

"'The wooden shingle again demonstrated its great superiority over other forms of roof covering in the recent heavy rain and wind storms in the southeastern cities. In the vicinity of Birmingham and through the east and south parts of the State the rainfall approached 12 inches in sixty hours, soaking all kinds of composition roofs, so that the winds rolled them up. The wooden shingles were not loosened by the winds as were those of other types. Much of the property damage was caused by water destroying the contents of buildings and in most cases the water entered because of defective roofing.'

"The Milwaukee Fire Department have given out some valuable information with regard to fires in Milwaukee:

"Of the 1,865 permits for frame and brick veneer buildings in 1913, three-fourths, or 1,398 were roofed with wooden shingles. It is estimated that a saving in cost over patent roofing has been made in these 1,398 buildings of $300,000. Half of this saving is made through the necessity, within a

PURDY, MANSELL LIMITED

TORONTO

Cut your Insurance in half by having us instal an

Automatic Fire Sprinkler System

throughout your Factory, Store or Warehouse.



Write us for Estimates

Correspondence Solicited

DARLINGS STEAM APPLIANCES



DARLING BROTHERS LIMITED
Engineers and Manufacturers
MONTREAL, CANADA

Branches: Toronto and Winnipeg

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POWER PRESSES

DROP AND SCREW

SHEET METAL STAMPINGS

DIES AND TOOLS

W. H. Banfield & Sons

370-384 Pape Ave. Toronto

PREPAREDNESS—

MEANS A SYSTEM OF

Manufacturers' Automatic Sprinklers



If your premises should be visited by that most dreaded of all enemies—

FIRE

are you PREPARED to FIGHT IT, or is your plant still unprotected?

Write us for particulars. Do not put it off, delays are dangerous and may mean serious loss.

The General Fire Equipment Co., Limited
72 QUEEN ST. EAST, TORONTO, CANADA

Goold, Shapley & Muir Co.
LIMITED
BRANTFORD : WINNIPEG : REGINA : CALGARY

MANUFACTURERS OF
GAS AND GASOLINE ENGINES



TANKS
AND
TOWERS
FOR
Sprinkler Systems
TOWN WATER SUPPLY
ETC., ETC

PUMPS
CONCRETE MIXERS
HOISTS, Etc.
Write, if interested

SPRINKLER TANKS and TOWERS



also wood and steel tanks for Municipal, Railway and Suburban water supply.

All our tanks and towers are built to pass inspection of any Board of Fire Underwriters.

Send for special tank and tower catalogue.

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HOT AND ELECTRIC

We do all kinds of hot and electro galvanizing for the trade. Our plant is one of the largest in Canada and our charges reasonable.

Write us for quotations on your galvanizing work.

Ontario Wind Engine & Pump Co., Limited
TORONTO MONTREAL WINNIPEG CALGARY



Canadian
Chicago Bridge & Iron Works
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ELEVATED STEEL TANKS AND STANDPIPES
For Municipal, Railroad and Factory Service

We also build Oil Tanks, Coaling Stations, Bridges, Turntables, Buildings and Structural Material. Write our nearest sales office to-day for prices, plans and specifications. Our catalogue No. 25 gladly mailed to you, upon request.

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SHOPS:
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Greenville, Pa. (Pittsburg District)
Chicago, Illinois

CHIEF OFFICE FOR CANADA, TORONTO

LONDON & LANCASHIRE FIRE
INSURANCE COMPANY
LIMITED

ALFRED WRIGHT, Manager, 8 Richmond St. E.

very short period, of reshingling the roofs covered with patent felts.

"The loss by fires on the wooden constructed buildings was in 1913 less than 1½%. On the brick buildings 5%. In 1912 the loss by fire on frame buildings amounted to $1.33 for each building. The loss on brick and stone and cement buildings was $27.07 for each building.

"There is no doubt that fires are much more easily controlled in frame buildings than in brick or stone buildings. Also that the most economic and serviceable roof is a shingled roof.

"We trust you will give this letter equal publicity with article disparaging cedar shingles."

LUBRICANTS AND CASINGS.

The Link-Belt Company, Inc., Chicago, have recently issued a booklet on "Lubrication and Casings for Silent Chain Drives." In it the manufacturers point out the great advantage to be derived from operating their drives in dust-tight, oil-tight casings. They are insuring the durability and satisfactory operation of their drives by insisting upon the use of oil and advocating the use of casings. Also casings, it is pointed out, make for safety, which is an ideal many manufacturers are striving for.

STEEL STAMPS.

H. Barnard Stamp & Stencil Co., Hamilton, have issued a neat price list of their steel stamps. Their output comprises dies for stamping and embossing, steel letters and figures, steel type for shell-marking machines, steel type for metal stamping, steel hand stamps from one-sixty-fourth of an inch up, or any marking device in steel. They make their own forgings and see that steel is not forged at an over-heat.

DOMINION GUARANTEED TEXTILE CO. COTTON FABRICS LIMITED

Canadian Manufacturers
OF
OVERALLS, SMOCKS
Working Shirts
House Dresses, Nurses'
Uniforms, Children's Frocks

and other garments of this class can put more value into their products, without increasing costs, by using Dominion Textile

"Rockfast" Drills
and
"Steelclad" Galateas

instead of imported fabrics. Our cottons, "Made in Canada," carry no duty—give more value at a price than any imported goods—and are the logical raw materials for "Made in Canada" garments.

Dominion Textile Co.
Limited
Montreal—Toronto—Winnipeg

Operating Twelve Mills;
Employing Ten Thousand People.

Manufacturing White and Grey Cottons, Prints, Sheetings, Shirtings, Pillow Cottons, Longcloths, Cambrics, Ducks, Bags, Twills, Drills, Quilts, Bureau Covers, Towels and Towelling, Blankets, Rugs, Twines and many other lines used by Manufacturers in Rubber and other Trades.

COTTON & WOOL WASTE

PACKED AT OUR
DOMINION WASTE FACTORY
TORONTO

THE GUARANTEE WITH OUR
Washed Cotton Wipers

All wipers have been hand selected, hard and starchy parts and buttons, etc., removed, sleeves and other closed parts opened and subjected to a thorough washing, rendering absolutely sanitary.

Write us for prices on our brands

SELECT WHITE MIXED COLORED
DARK COLORED

SCYTHES & COMPANY, LIMITED
Manufacturers and Jobbers, Toronto, Montreal

WASHED COTTON WIPERS



Penmans



Underwear, Hosiery and Sweaters
Laundry, Pulp and Papermakers' Felts, Blankets
Lumbermen's Socks, etc.

Factories at

PARIS, THOROLD, PORT DOVER, ALMONTE AND BRANTFORD, ONTARIO
ST. HYACINTHE AND COATICOOK, QUEBEC

Penmans LIMITED

PARIS : : : CANADA

Doon Twines
Limited
Doon, Ontario

MANUFACTURERS OF

Plow Lines, Clothes Lines, Jute Twines of every description Warehouse Twines Light and Heavy Wrapping Twines

THE
MONTREAL COTTONS
LIMITED

MANUFACTURERS OF

WHITE VICTORIA LAWNS

WHITE NAINSOOKS

and

DYED COTTONS

OF EVERY DESCRIPTION

By Royal Warrant

"Canadian Club" Whisky

Fully Ripened in Wood. Age Guaranteed by Government.

QUALITY UNEXCELLED

Distilled and Bottled by

HIRAM WALKER & SONS
LIMITED

Walkerville, Canada

LONDON CHICAGO NEW YORK
MEXICO CITY VICTORIA, B.C. WINNIPEG

McClary's

Specialists in

HOTEL AND INSTITUTION KITCHEN APPLIANCES

and Manufacturers of the "FAMOUS" line of Goods including

Coal and Wood
FURNACES

Electric, Gas, Coal and Wood
STEEL AND CAST RANGES

Coal, Gas, Wood and Oil
HEATERS

ENAMELWARE, TINWARE AND OTHER KITCHEN WARE

LONDON TORONTO
MONTREAL WINNIPEG
VANCOUVER

McClary's

ST. JOHN, N.B. HAMILTON
CALGARY SASKATOON
EDMONTON



MACDONALD MANUFACTURING CO., LIMITED, TORONTO

We Specialize on Cans or Boxes required for Customer's Exclusive use
Practically Nothing Else made in our Entire Plant
This Ensures Undivided Attention to Your Particular Order

PLAIN OR DECORATED TIN BOXES AND SIGNS

BUYERS' GUIDE TO CANADIAN MANUFACTURES

A List of Articles Which Will Enable the Purchaser to Know the Manufacturers of Made-in-Canada Goods. For Rates for Insertion in this Department Write to the Advertising Manager of Industrial Canada, Toronto.

ABRASIVE MATERIALS
*Canadian Hart Wheels, Ltd., Hamilton, Ont.
*Dominion Abrasive Wheel Co., New Toronto, Ont.

ACCOUNT BOOKS
*The Brown Bros., Ltd., Toronto.

ACETYLENE GAS BURNERS
Economic Acetylene Burner Co., Toronto.

ACIDS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal.

ADJUSTARODS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ADVERTISING NOVELTIES
Lawson & Jones, Ltd., London, Ont.

AERATED BEVERAGES
Charles Gurd & Co., Ltd., Montreal, Que.
J. J. McLaughlin, Ltd., Toronto.

AIR COMPRESSORS
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.
*Jenckes Machine Co., Sherbrooke, P.Q.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

ALCOHOL
The St. Hyacinthe Distillery Co. Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

ALE
E. L. Drewry, Winnipeg, Man.

ALUMINUM
*Northern Aluminum Co., Ltd., 1305 Traders Bank, Toronto.

ALUMINUM CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

AMMONIA
Canadian Ammonia Co., Ltd., Toronto.

ANGLE BARS
*The Steel Company of Canada, Limited, Hamilton, Ont.

ARC AND INCANDESCENT HEADLIGHTS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

ASBESTOS:
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEATHING:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS SHEET AND PISTON PACKINGS
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS STEAM PIPE AND BOILER COVERINGS
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASBESTOS TEXTILES:
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

ASPHALT SHINGLES
*Bird & Son, Hamilton, Ont.

ATHLETIC UNDERWEAR
Williams, Green & Rome Co., Ltd., Berlin, Ont.

AUTOMOBILE ACCESSORIES,
*Northern Electric Co., Limited, Montreal.
*Tallman Brass & Metal Co., Hamilton, Ont.

AUTOMOBILE PARTS
*Dominion Forge & Stamping Co., Walkerville, Ont.

AWNING CORD (cotton)
Hamilton Cotton Co., Hamilton, Ont.

AXLES
Canada Forge Co., Ltd., Welland, Ont.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

AXLES, carriage and automobile
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

BABBITT METAL
Alonzo W. Spooner, Limited, Port Hope, Ont.
*The Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BACON
E. W. Fearman Co., Ltd., Hamilton, Ont.

BAGS
*Scythes & Co., Ltd., Toronto.

BAGS, Cotton
The Canadian Bag Co., Ltd., Montreal, Que.

BAGS, jute
The Canadian Bag Co., Ltd., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BAGS, travelling
J. Eveleigh & Co., Ltd., Montreal, Que.
Lamontagne, Ltd., Montreal, Que.
The M. Langmuir Mfg. Co., of Toronto, Ltd., Toronto.

BAKING JAPAN
*Berry Bros., Ltd., Winnipeg, Man.

BAND RESAWS:
*Berlin Machine Works, Ltd., Hamilton, Ont.

BANK AND OFFICE RAILINGS
*The Geo. B. Meadows, Toronto, Wire, Iron & Brass Works Co., Ltd., Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

BANK FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

BANK RAILINGS and CAGES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London.

BANK SIGNS AND FITTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

BARRELS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

BARS, iron
London Rolling Mill Co., Limited, London, Ont.

BARS, steel
London Rolling Mill Co., Limited, London, Ont.

BASEBALL GOODS
A. J. Reach Co., Brantford, Ont.

BATHS, enamelled
Amherst Foundry Co., Ltd., Amherst, N.S.

BATTERIES, dry
The Canadian National Carbon Co., Ltd., Toronto.
Canadian Carbon Company, Ltd., Toronto.

BEARINGS
*The Chapman Double Ball Bearing Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS, bronze
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BEARINGS, pillow block and upright
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEARINGS
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

BEDS, camp folding
*Otterville Mfg. Co., Ltd., Otterville, Ont.

BEEF
E. W. Fearman Co., Ltd., Hamilton, Ont.

BEER
E. L. Drewry, Winnipeg, Man.

BELTING, chain conveyors
*Canadian Link Belt Co., Toronto.

BELTING, chains
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd, Galt, Ont.

BELTING, Elevator
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.

BELTING, leather
The Beardmore Belting Co., Ltd., Toronto.
*J. L. Goodhue & Co., Danville, P.Q.
*Sadler & Howarth, Montreal.
*The D. K. McLaren Belting Co., Ltd., Montreal.
*The J. C. McLaren Belting Co., Ltd., Montreal.

BELTING, rubber
*Canadian Consolidated Rubber Co., Ltd., Montreal, Que.
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Limited, Toronto.

BELTING, Stitched Cotton
*Dominion Belting Co., Hamilton.

BENT GOODS
The Crown Lumber Co., Woodstock, Ont.

BICYCLES AND ACCESSORIES
*Canada Cycle and Motor Co., Ltd., Toronto.

BISCUITS
The Montreal Biscuit Co., Montreal, Que.

BLACK SHEETS
*A. C. Leslie & Co., Montreal.

BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Ltd., Bolton, Ont.

BLANKETS, horse
Slingsby Mfg. Co., Ltd., Brantford, Ont.
J. Walsham & Son, Limited, Bolton, Ont.

BLASTING ACCESSORIES
Canadian Explosives, Ltd., Montreal, Que.

BLEACHING POWDER
Canadian Salt Co., Ltd., Windsor, Ont.

BLOWERS
*Sheldons, Ltd., Galt, Ont.

BOATS OF ALL KINDS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

BOILER COMPOUND and OILS
*Canadian H. W. Johns-Manville Co., Toronto.
Electric Boiler Compound Co., Ltd., Guelph, Ont.

BOILER PRESERVATIVES
*Beveridge Paper Co., Limited, Montreal, Que.

BOILERS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Darling Bros., Montreal.
*Goldie & McCulloch Co., Limited, Galt, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.
*Polson Iron Works, Ltd., Toronto.
J. & R. Weir, Montreal, Que.
Taylor-Forbes Co., Ltd., Guelph, Ont.
*Jenckes Machine Co., Sherbrooke, Que.
*The Waterous Engine Works Co., Ltd., Brantford.

BOILERS, hot water or steam.
Steel & Radiation, Ltd., Toronto.
Warden King, Ltd., Montreal, Que.

BOILERS, steam.
*Jenckes Machine Co., Sherbrooke, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
Steel and Radiation Ltd., Toronto.
Warden King, Ltd., Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILERS, steam and brass work
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BOILER STANDS
Anthes Foundry Ltd., Toronto.

BOLSTERS
*Canadian Car & Foundry Co., Ltd., Montreal, Que.

BOLTS
*The National Acme Mfg Co., Montreal., Que.

BOLTS AND NUTS
*The Canadian Tube & Iron Co., Ltd., Montreal, Que.
*The Steel Company of Canada, Limited, Hamilton, Ont.
Starr Mfg. Co., Ltd., Dartmouth, N.S.

BOOKBINDERS
R. G. McLean, Toronto.
*The Brown Bros., Ltd., Toronto.

BOOKCASES, sectional (Gunn)
The George McLagan Furniture Co., Ltd., Stratford, Ont.

BOOKLETS
Stone Limited, Toronto.
R. G. McLean, Toronto.

BOOKS, blank
*The Brown Bros., Ltd., Toronto.

BOOTS AND SHOES
Ames-Holden-McCready, Ltd., Montreal, Que.
J. Leckie Co., Ltd.
The John Ritchie Co., Ltd., Quebec, Que.

BOXES, cellular board:
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls.

BOXES, rattle and soap
The Arlington Co. of Canada, Ltd., Toronto.

BOXES AND SHOOKS, wooden
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

BOXES, wooden
G. & J. Esplen, Montreal, Que.
Barchard & Co., Ltd., Toronto.

BRAIDS AND TRIMMINGS
The Moulton Mfg. Co., Limited, Montreal.

BRAKE SHOES
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRANDS, burning
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS BOLTS AND NUTS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS, BRONZE and ALUMINUM LETTERS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS ENGRAVERS
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS FOUNDERS AND FINISHERS
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

*For Display Advertisement See Index, Page 681

BRASS GOODS
*The Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*Mueller Mfg. Co., Sarnia.
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.
*The Kerr Engine Co., Ltd., Walkerville, Ont.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS PLATES
Geo. Booth & Son., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS RODS, SHEETS AND PLATES
*Brown's Copper and Brass Rolling Mills, Ltd., New Toronto.

BRASS SIGNS AND MEMORIALS
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WIRE
Canadian Seamless Wire Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

BRASS WORK, church
Pritchard, Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

BRASS WORK, special
Bawden Machine Co., Ltd., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

BRICK
National Brick Co. of Laprairie, Laprairie, P.Q.
Port Credit Brick Co., Port Credit, Ont.

BRICK, enamel
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, pressed
National Brick Co. of Laprairie, Laprairie, P.Q.

BRICK, rubbing
*Canadian Hart Wheels, Limited, Hamilton, Ont.

BRICK, sewer
National Brick Co. of Laprairie, Laprairie, P.Q.

BRIDGES, Railway and Highway
*Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Walkerville, Ont.
*The Canadian Bridge Co., Ltd., Hamilton, Ont.
*The Structural Steel Co., Limited, Montreal, Que.

BRONZE, Cored Bars
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

BROOMS
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.
*Boeckh Bros. Co., Toronto.

BRUSHES
*Boeckh Bros. Co., Toronto.
Simms, T. S., & Co., Limited, St. John, N.B.
Stevens-Hepner Co., Limited, Port Elgin, Ont.

BRUSHES, carbon
Canadian National Carbon Co., Ltd., Toronto.

BUCKET TANKS
*The General Fire Equipment Co., Limited, Toronto, Ont.

BUCKLES, shoe and coat
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

BUILDING
Bathurst Lumber Co. Ltd., Bathurst, N.B.

BUILDING BLOCKS, vitrified, salt glazed
Standard Clay Products, Ltd., St. Johns, Que.

BUILDING FELT and PAPER
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

BUILDING PAPERS
*Bird & Son, Hamilton, Ont.

BUILDERS, ship
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.

BURLAPS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Ltd., Toronto.

BURLAPS, decorative
Dominion Oil Cloth Co., Limited, Montreal, Que.

CABINETS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CABLE, Copper and galvanized
*The Steel Co. of Canada, Ltd., Hamilton, Ont.

CABLES, transmission and telephones
*Eugene F. Phillips Electrical Works, Ltd., Montreal, Que.

CABLES, Transmission and Cable
*Northern Electric Co., Limited, Montreal, Que.

CABLES, wire
The Dominion Wire Rope Co., Ltd., Montreal, Que.
*The B. Greening Wire Co., Ltd., Hamilton, Ont.

CALENDARS, ADVERTISING NOVELTIES, etc.
Rolph & Clark, Limited, Toronto.
Lawson & Jones, Limited, London, Ont.
Stone Limited, Toronto.

CAMERAS
Canadian Kodak Co., Limited, Toronto.

CAMPERS' OUTFITTERS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

CANOES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

CANS, baking powder, etc.
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, fruit
American Can Co., Montreal and Hamilton.
A. R. Whittall, Montreal, Que.

CANS, tin
A. R. Whittall, Montreal, Que.
American Can Co., Montreal and Hamilton.

CANS, iron, lead and putty
A. R. Whittall, Montreal, Que.

CANVAS
*Scythes & Co., Ltd., Toronto.

CAPS, cloth
John W. Peck & Co., Ltd., Montreal, Que.

CARBIDE
*Canada Carbide Co., Ltd., Montreal, Que.

CARBON BRUSHES
Canadian Carbon Co., Limited, Toronto.

CARBON PRODUCTS
Canadian Carbon Co., Limited, Toronto.

CARBONS, arc light
Canadian Carbon Co., Limited, Toronto.
The Canadian National Carbon Co., Ltd.

CARBONS, flame
Canadian Carbon Co., Limited, Toronto.

CARBONIC ACID GAS
Canadian Carbonate Company, Ltd., Montreal, Que.

CARBIDE OF CALCIUM
*Canada Carbide Co., Ltd., Montreal, Que.
*Union Carbide Co., Welland, Ont.

CARDBOARD
Bathurst Lumber Co., Ltd., Bathurst, N.B.

CARPETS AND RUGS
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Axminster and ingrain
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPETS AND RUGS, Brussels and Wilton
Toronto Carpet Mfg. Co., Limited, Toronto.

CARPET YARNS, worsted and wool
Toronto Carpet Mfg. Co., Limited, Toronto.

CARRIAGES, baby, etc.
Canada Furniture Manufacturers, Ltd., Woodstock, Ont.

CARRIERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

CARRIERS, box and barrel
Canadian Mathews Gravity Carrier Co., Limited, Toronto.

CARRIERS, brick
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*Richards-Wilcox Canadian Co., Ltd., London, Ont.

CARS
Canadian Car & Foundry Co., Ltd., Montreal, Que.
*National Steel Car Co., Limited, Hamilton, Ont.

CARS, industrial
*Sheldons, Ltd., Galt.

CARTONS, lithographed
Harris Lithographing Co., Toronto.

CASTINGS
*Tallman Brass & Metal Co., Hamilton, Ont.

CASTINGS, aluminum
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass
*Tallman Brass & Metal Co., Hamilton, Ont.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

CASTINGS, brass and bronze
*Tallman Brass & Metal Co., Hamilton, Ont.
*Kinzinger, Bruce & Co., Limited, Niagara Falls, Ont.

CASTINGS, grey iron
*Dodge Mfg. Co., Toronto.
*Canadian Car & Foundry Co., Ltd., Montreal, Que.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

CASTINGS, malleable iron
*Galt Malleable Iron Co., Ltd., Galt, Ont.
*Pratt & Letchworth Co., Brantford, Ont.

CASTINGS, steel
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton, Ont.
Hull Iron and Steel Foundry, Ltd., Hull, P.Q.
*Joliette Steel Co., Ltd., Montreal.
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

CATALOGUE MAKERS
Grip, Ltd., Toronto.
R. G. McLean, Toronto.

CAUSTIC SODA
Canadian Salt Co., Ltd., Windsor, Ont.

CELLBOARD
Adams Cellboard Co., Toronto, Ont.

CEMENT GUNS
Steel and Radiation, Ltd., Toronto.

CHAIN, silent drive
*Canadian Link Belt Co., Toronto.

CHAIRS, assembly hall
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, folding
Stratford Mfg. Co., Ltd., Stratford, Ont.

CHAIRS, rattan and upholstered
Imperial Rattan Co., Ltd., Stratford, Ont.

CHEMICALS
*The Grasselli Chemical Co., Ltd., Toronto.
*The Nichols Chemical Co., Ltd., Montreal, Que.

CHEMICAL LABORATORY APPARATUS
The Geo. M. Hendry Co., Limited, Toronto.

CHICLETS AND CHEWING GUM
Canadian Chewing Gum Co., Ltd., Toronto.

CIGARS
Ed. Youngheart & Co., Limited, Montreal, Que.

CIGARETTES AND TOBACCO
Philip Morris & Co., Limited, Montreal, Que.

CIRCULAR CUTTERS, solid steel
The Peter Hay Knife Co., Limited, Galt, Ont.

CLAM SHELL BUCKETS
*M. Beatty & Sons, Ltd., Welland, Ont.

CLOCKS, TIME
*International Time Recording Co. of Canada, Ltd., Toronto.

CLOCKS, WATCHMEN'S
*The General Fire Equipment Co., Limited, Toronto.

CLOSET SEATS
*Goderich Organ Co., Goderich, Ont.

CLOTHING
John W. Peck & Co., Ltd., Montreal, Que.
Mackenzie & Co., Ottawa, Ont.

CLOTHING, leather and sheepskin lined coats
*A. R. Clarke & Co., Ltd., Toronto.

CLOTHING, Mackinaw
The Carss Mackinaw Clothing Co., Ltd., Orillia, Ont.

CLOTHES LINES, cotton
Hamilton Cotton Co., Hamilton, Ont.

CLUTCHES
*Dodge Mfg. Co., Ltd., Toronto.

CLUTCHES, conveyors
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

COAL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.
Standard Fuel Co., Toronto.

COBALT OXIDE
The Coniagas Reduction Co., Ltd., St. Catharines, Ont.

COCOA AND CHOCOLATE PREPARATIONS
Walter Baker & Co., of Canada, Ltd., Montreal, Que.

COFFEE
S. H. Ewing & Sons, Montreal, Que.

COLD DRAWN SHAPES, flats, squares and hexagons
*The Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

COLD STORAGE DOORS
John Hillock & Co., Ltd., Toronto.

COLLAR BUTTONS
The Arlington Co. of Canada, Ltd., Toronto.

COLLARS
The Standard Shirt Co., Limited, Montreal, Que.

COLLARS, coated linen
Parsons & Parsons Canadian Co., Hamilton, Ont.

COLORS
Brandram-Henderson, Limited, Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

COMBS, fine dressing and name
The Arlington Co. of Canada, Ltd., Toronto.

COMMERCIAL STATIONERS
Rolph & Clark, Ltd., Toronto.

COMMERCIAL STATIONERY
*Brown Bros., Ltd., Toronto.

CONCENTRATORS
*Jenckes Machine Co., Sherbrooke, Que.

CONCRETE COATINGS, paints, etc.
The Imperial Varnish & Color Co., Limited, Toronto.

CONDUITS FOR INTERIOR WIRING
*Conduits Company, Ltd., Toronto.

CONDULETS FOR ELECTRICAL INSTALLATIONS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

CONFECTIONERY
Ganong Bros., Ltd., St. Stephens, N.B.
Moirs, Limited, Halifax, N.S.
The Montreal Biscuit Co., Montreal, Que.

CONTRACTORS' PLANT
*M. Beatty & Sons, Ltd., Welland, Ont.

CONVEYORS
*Canadian Mathews Gravity Carrier Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*Jenckes Machine Co., Sherbrooke,

COPPER
*Eugene F. Phillips, Electrical Works, Limited, Montreal.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER SHEETS AND PLATES
*Booth-Coulter Copper & Brass Co., Limited, Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

COPPERSMITHS
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER TUBING, seamless
Canadian Seamless Wire Co., Ltd., Toronto.
*Booth-Coulter Copper & Brass Co., Limited, Toronto.

COPPER WIRE
Canadian Seamless Wire Co., Ltd., Toronto.

CORKS
S. H. Ewing & Sons, Montreal, Que.

CORK CARPET
Dominion Oil Cloth Co., Ltd., Montreal, Que.

CORRUGATED PAPER BOXES
Adams Cellboard Co., Toronto.
*Hinds & Dauch Paper Co., Toronto.
*Martin Corrugated Paper & Box Co., Limited, Toronto.
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

CORSETS
Dominion Corset Co., Quebec, Que.

COTTONS
*Dominion Textile Co., Limited, Montreal, Que.
*Montreal Cottons, Ltd., Valleyfield, P.Q.

COTTONADES
Hamilton Cotton Co., Hamilton, Ont.

COUPLERS
*Canadian Steel Foundries, Ltd., Welland, Ont.

CRANES
*Northern Crane Works, Walkerville, Ont.

CRANES, locomotive
*Canadian Link Belt Co., Toronto.

COUPLINGS
*Dodge Mfg. Co., Ltd., Toronto.

CRANKSHAFTS
Canada Forge Co., Ltd., Welland, Ont.

CREAM CHEESE, Ingersoll
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

CREAM SEPARATORS AND MILK CLARIFIERS
De Laval Dairy Supply Co., Peterboro, Ont.

CREAMERY AND CHEESE FACTORY MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

CREOSOTED MATERIALS
*Paterson Mfg. Co., Toronto and Montreal.

CRUSHED STONE
The Hagersville Contracting Co., Limited, Hagersville, Ont.

CRUSHING ROLLS
*Jenckes Machine Co., Sherbrooke, Que.

CUPOLAS
*Sheldons, Ltd., Galt, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

CUPS, presentation
Standard Silver Co., Toronto.

CUPS, grease and oil
*The Canadian Winkley Co., Ltd., Windsor, Ont.

CURLED HAIR
*Delany and Pettit, Ltd., Toronto.

CURTAINS, chenille
Hamilton Cotton Co., Hamilton, Ont.

CUTLERY
Standard Silver Co., Toronto.

CUTTERS, (Machine)
*Pratt & Whitney Co., Dundas.

DENIMS
Hamilton Cotton Co., Hamilton, Ont.

DERAILS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

DESIGNERS
Ontario Engraving Co., Hamilton, Ont.

DESIGNERS and PRINTERS OF BOOKLETS, ETC.
Grip, Ltd., Toronto.

DINING ROOM SUITES
The George McLagan Furniture Co., Limited, Stratford, Ont.

DIES
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

DISINFECTING APPARATUS
Spramotor Co., London, Ont.

DOOR HANGERS
*Richards Wilcox Canadian Co., Ltd., London, Ont.

DRAPERY AND UPHOLSTERY GOODS
Daly & Morin, Montreal, Que.

DREDGES
*M. Beatty & Sons, Limited, Welland, Ont.

DRESSING, belt.
Sadler & Haworth, Montreal, Que.

DRESS AND CLOAK TRIMMINGS
J. Henry Peters Co., 1 Mincing St., Toronto.

DRILLS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*Pratt & Whitney Co., Dundas.

DRILLS, rock
*Canadian Ingersoll Rand Co., Sherbrooke, Que.
*Jenckes Machine Co., Sherbrooke, Que.

DRIFT BOLTS OR SPIKES
London Rolling Mill Co., Limited, London, Ont.

DROP FORGINGS
*Canadian Billings & Spencer, Ltd., Welland, Ont.

DRUMS, steel, and containers
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

DRY CELLS, electric
Canadian Carbon Co., Limited, Toronto.

DRY COLORS
P. D. Dods & Co., Ltd., Montreal, Que.
The Imperial Varnish & Color Co., Limited, Toronto.
R. C. Jamieson & Co., Ltd., Montreal, Que.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

DUMB WAITERS
Turnbull Elevator Mfg. Co., Toronto.

DURABLE WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal, Que.

DYNAMITE
Canadian Explosives, Limited, Montreal, Que.

DYNAMOS
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.

DYNAMOS, plating
*Jones & Moore Electric Co., Ltd., Toronto.

EIDERDOWN
Galt Knitting Co., Ltd., Galt.

ELECTRIC APPLIANCES
*Canadian Crocker-Wheeler Co., Limited, St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

ELECTRICAL COMPOUNDS
Standard Paint Co. of Canada, Ltd., Montreal, Que.

ELECTRICAL AND GAS FIXTURES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Limited, Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.

ELECTRIC LAMPS
Packard Electric Co., Limited, Toronto.

ELECTRIC PLATE WARE
Roden Bros., Ltd., Toronto.

ELECTRIC BATTERIES
Canadian Carbon Co., Limited, Toronto.

ELECTROTYPING
Central Press Agency, Toronto.

ELECTRICAL SUPPLIES
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
*Crouse-Hinds Co. of Canada, Ltd., Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

ELECTRO-SILVER PLATED WARE
Standard Silver Co., Toronto.

ELEVATING MACHINERY
*Canadian Mathews Gravity Carrier Co., Toronto.

ELEVATORS
*Jenckes Machine Co., Sherbrooke, Que.
Turnbull Elevator Manufacturing Company, Toronto.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

ELEVATORS FOR ALL PURPOSES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ELEVATOR GATES AND DOORS
Turnbull Elevator Mfg. Co., Ltd., Toronto.

ELEVATOR GUARDS
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.
*Canada Wire and Iron Works, Hamilton, Ont.

ELEVATORS, hydraulic and electric
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

EMERY DRESSERS and STANDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY GRINDERS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEELS
*Canadian Hart Wheels, Limited. Hamilton, Ont.

EMERY WHEEL GUARDS
*Canadian Hart Wheels, Limited, Hamilton, Ont.

EMERY WHEEL Safety Flanges
*Canadian Hart Wheels, Limited, Hamilton, Ont.

ENAMELS
R. C. Jamieson & Co., Limited, Montreal, Que.

ENAMEL MANUFACTURERS AND DECORATORS
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

ENAMEL AND TIN WARE
McClary Mfg. Co., London, Ont.

ENGINES
*E. Leonard & Sons, London, Ont.
*Goldie & McCulloch Co., Limited, Galt, Ont.
J. & R. Weir, Montreal, Que.
*Jenckes Machine Co., Sherbrooke, Que.
*Polson Iron Works, Limited, Toronto.
*Sheldons, Ltd., Galt, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, gas and gasoline
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Massey-Harris Co., Ltd., Toronto.

ENGINES, gasoline, tractor, plowing and threshing
*Sawyer-Massey Co., Ltd., Hamilton, Ont.

ENGINES, hoisting
*M. Beatty & Sons, Welland, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

ENGINES, steam plowing and threshing
Sawyer-Massey Co., Limited, Hamilton, Ont.

ENGRAVERS
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.
Rolph & Clark, Limited, Toronto.
Stone, Limited, Toronto.

ENGRAVERS, half-tone
Grip, Limited, Toronto.
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS, wood
Ontario Engraving Co., Hamilton, Ont.

ENGRAVERS AND PRINTERS steel plate
American Bank Note Co., Ottawa, Ont.

ENGRAVERS AND PRINTERS banknote
American Bank Note Co., Ottawa, Ont.

ENGRAVING
*J L. Jones Engraving Company, Toronto.

ENGRAVING, copper and steel plate
Pritchard-Andrews Co. of Ottawa, Limited. Ottawa, Ont.

ENSILAGE AND STRAW CUTTERS
J. Fleury's Sons, Aurora, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

ENVELOPES
Barber-Ellis Co., Ltd., Toronto.
Canada Envelope Co., Montreal, Que.

EXCELSIOR
*Delany & Pettit, Ltd., Toronto.

EXCELSIOR PADS
*Delany & Pettit, Ltd., Toronto.
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

EXPERTS IN PATENT CAUSES
Ridout & Maybee, Toronto.

EXPLOSIVES, high
Canadian Explosives Ltd., Montreal, Que.

FACE PLATE JAWS
Ker & Goodwin, Brantford, Ont.

FACTORY SUPPLIES, cheese and creamery
De Laval Dairy Supply Co., Ltd., Montreal, Que.
J. Henry Peters Co., 1 Mincing St., Toronto.

FANS
*Sheldons, Limited, Galt, Ont.

FASTENERS, belt
*Sadler & Haworth, Montreal, Que.

FELTS, PULP AND PAPER MAKERS
Ayers Limited, Lachute Mills, P.Q.

FENCES AND GATES
*Dennis Wire & Iron Works Co., London, Ont.
*Canada Wire and Iron Works, Hamilton, Ont.

FENCING AND GATES, woven wire
Banwell Hoxie Wire Fence Co., Hamilton, Ont.
*Canada Wire and Iron Goods Co., Hamilton, Ont.

FENCING, wire
C. H. Johnson & Sons, Limited, Montreal, Que.

FIBRE PAILS
*The E. B. Eddy Co., Ltd., Hull, Que.

FILES
Henry Disston & Sons, Limited, Toronto.
*The Nicholson File Co., Port Hope, Ont.

FILING CABINETS
*Office Specialty Co., Newmarket, Ont.

FIRE ALARMS
*Northern Electric Co., Limited, Montreal, Que.

FIRE DOOR HARDWARE
*Richards Wilcox Canadian Co., Limited, London, Ont.

FIRE DOORS
*A. B. Ormsby Co., Ltd., Toronto.

FIRE ENGINES
*The Waterous Engine Works Co., Limited, Brantford, Ont.

*For Display Advertisement, See Index, Page 681

FIRE ESCAPES
*Canada Wire and Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

FIRE EXTINGUISHERS
*A. B. Ormsby Co., Ltd., Toronto.
*Booth-Coulter Copper and Brass Co., Limited, Montreal, Que.
*The General Fire Equipment Co., Limited, Toronto, Ont.

FIRE FIGHTING APPARATUS
*The Waterous Engine Works Co., Limited, Brantford, Ont.

FIRE HOSE
*Canadian Consolidated Rubber Co., of Canada, Limited, Montreal, Que.
Dunlop Tire and Rubber Goods Co., Limited, Toronto.
*Gutta Percha and Rubber, Ltd., Toronto.

FIRE PREVENTION MATERIAL
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*Eureka Mineral Wool & Asbestos Co., Toronto.
*The General Fire Equipment Co., Limited, Toronto.

FIRE-PROOF WINDOWS AND DOORS
A. B. Ormsby Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

FIRE SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*The General Fire Equipment Co., Limited, Toronto.
*Purdy Mansell Co., Toronto.
*H. G. Vogel Co., Montreal, Que.

FIRE AND WATER DEPARTMENT SUPPLIES
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
The Garth Co., Montreal, Que.

FISH, Atlantic Sea-Foods
Maritime Fish Corporation Ltd., Montreal, Que.

FITTINGS FOR SOIL PIPE
Anthes Foundry, Ltd., Toronto.

FITTINGS, steam
Warden King, Ltd., Montreal, Que.

FLAGS
*Scythes & Co., Limited, Toronto.

FLASHLIGHTS
Canadian Carbon Co., Toronto.

FLOORING, hardwood
Seaman Kent Co., Ltd., Meaford, Ont.

FLUE LINERS
Standard Clay Products, Ltd., St. Johns, Que.

FORGES
*Sheldons, Limited, Galt, Ont.

FORGINGS
Canada Forge Co., Ltd., Welland, Ont.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

FORGINGS, drop
*Dominion Forge and Stamping Co., Walkerville, Ont.

FOUNDRY EQUIPMENT
*Northern Crane Works, Limited, Walkerville, Ont.

FOUNTAIN FRUITS and Juices
J. J. McLaughlin, Ltd., Toronto.

FRICTION CLUTCH PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.

FROGS AND CROSSINGS, manganese
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

FUEL
Standard Fuel Co., Toronto.

FUR GARMENTS, men's and women's
Holt, Renfrew, Ltd., Quebec.

FUR GOODS
John W. Peck & Co., Limited, Montreal, Que.

FUR TRIMMINGS, ornaments and buttons
J. Henry Peters Co., 1 Mincing St., Toronto.

FURNACES
McClary Mfg. Co., London, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

FURNACES, hot air
Bedford Stove Co., Bedford, Que.

FURNACES, oil burning
*Canadian Hoskins Co., Walkerville, Ont.
*Mechanical Engineering Works, Montreal, Que.

FURNITURE, hall
The George McLagan Furniture Co., Limited, Stratford, Ont.

FURNITURE, office
The Canadian Office and School Furniture Co., Ltd., Preston, Ont.

FURNITURE, reed and rattan
Imperial Rattan Co., Ltd., Stratford, Ont.

FUSE BOXES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

FUSES
*Economy Fuse and Mfg. Co., Montreal.

GALVANIZED IRON
*A. C. Leslie & Co., Montreal.

GALVANIZED SHEETS
*Dominion Sheet Metal Co., Hamilton, Ont.

GALVANIZERS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.
*Ontario Wind Engine and Pump Co., Limited, Toronto.

GASOLINE ENGINES
*Ontario Wind & Pump Co., Ltd., Toronto.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

GASOLINE FIRE ENGINES
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

GASOLINE MOTORS, "Imperial" Marine
Bruce Stewart & Co., Ltd., Charlottetown, P.E.I.

GASOLINE STORAGE SYSTEMS, special underground
S. F. Bowser & Co., Toronto.

GASOLINE
*The Imperial Oil Co., Limited, Toronto.

GEARS, cut
Hamilton Gear & Machine, Toronto.

GENERATORS
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.

GINS
The Melchers Gin & Spirits Distillery Co., Ltd., Montreal, Que.

GLASSWARE
Dominion Glass Co., Limited, Montreal, Que.

GLASSWARE, cut
Roden Bros., Ltd., Toronto.

GLASS FOR BUILDINGS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS BENDERS
Toronto Plate Glass Importing Co., Limited, Toronto.

GLASS, mirror
Toronto Plate Glass Importing Co., Limited, Toronto.

GLOVES AND MITTS
*A R. Clarke & Co., Ltd., Toronto.
Craig, Cowan Co., Ltd., Toronto.

GLUE
Canada Glue Co., Ltd., Brantford.
*Delany and Pettit, Ltd., Toronto.

GOLD-FILLED WIRE AND PLATE
Canadian Seamless Wire Co., Toronto.

GOLD AND SILVER REFINERS
Canadian Seamless Wire Co., Toronto.

GRAIN CRUSHERS (Rapid Easy)
J. Fleury's Sons, Aurora, Ont.

GRAPE JUICE
J. J. McLaughlin, Ltd., Toronto.
The Welch Co., Ltd., St. Catharines.

GRATES
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

GRAVITY CARRIERS
*Canadian Mathews Gravity Carrier Co., Toronto.

GRILLES, metal
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

GRINDERS, Pedestal and Bench
*Canadian Hart Wheels, Limited, Hamilton, Ont.

GRINDING and Polishing Machinery
*Canadian Hart Wheels, Limited. Hamilton, Ont.

GRINDING WHEELS
*Canadian Hart Wheels, Limited, Hamilton, Ont.
*The Dominion Abrasive Wheel Co., Limited, New Toronto.

GRINDSTONES
*Richards-Wilcox Canadian Co., Limited, London, Ont.

GUNN SECTIONAL BOOKCASES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

GUY ANCHORS
B. J. Coghlin Co., Ltd., Montreal.

GYPSUM, crushed
*Albert Mfg. Co., Hillsborough, N.B.

GYPSUM PRODUCTS
*Manitoba Gypsum Co., Ltd., Winnipeg, Man.
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

HALL FURNITURE
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

HAMS
F. W. Fearman Co., Ltd., Hamilton, Ont.

HANDLES (Axe, pick, sledge hammers, etc.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

HANGERS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HARDWARE
*Richards-Wilcox Canadian Co., Limited, London, Ont.
Taylor-Forbes Co., Limited, Guelph, Ont.
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

HARDWOOD FLOORING
Wilson Bros. Limited, Collingwood, Onto.

HARDWOOD INTERIOR FINISH
Wilson Bros., Ltd., Collingwood, Ont.

HARDWOOD VENEER DOORS TO DETAIL
Wilson Bros., Ltd., Collingwood, Ont.

HARNESS
Lamontagne Ltd., Montreal, Que.

HARPPON GUY ANCHORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

HATS, men's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's straw
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' and children's felt and beaver
The Crown Hat Co., Limited, Galt, Ont.

HATS, ladies' felt and straw
Toronto Hat Mfg. Co., Toronto.

HAULAGE, Wire Rope
The Dominion Wire Rope Co., Ltd., Montreal, Que.

HEATERS
*Waterous Engine Works Co., Ltd., Brantford, Ont.

HEATERS, feed water
*Darling Bros., Ltd., Montreal.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

HEATING APPLIANCES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Limited, Galt, Ont.

HEATING SYSTEMS
*C. A. Dunham Co., Ltd., Toronto.

HESSIANS
The Canadian Bag Co., Limited, Montreal, Que.
*Scythes & Co., Limited, Toronto.

HINGES
*The Steel Co. of Canada, Limited, Hamilton, Ont.

HOISTS
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTS, electric and pneumatic
*M. Beatty & Sons, Ltd., Welland, Ont.
*Canadian Link Belt Co., Toronto.
*Northern Crane Works, Limited, Walkerville, Ont.

HOISTING MACHINERY
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

HOSE, fire
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.

HOSE, half, Imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

HOSE, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.

HYDRAULIC PRESSES
Bawden Machine Co., Limited, Toronto.
*William R. Perrin, Ltd., Toronto.

ICE CREEPERS
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ICE-MAKING MACHINERY
The Linde Canadian Refrigeration Co., Limited, Montreal, Que.

INCUBATORS & BROODERS
Lee Mfg. Co., Ltd., Pembroke, Ont.

INJECTORS, automatic and autopositive
Penberthy Injector Co., Limited, Windsor, Ont.

INSULATION, patent seamless cork
*Canadian H. W. Johns-Manville Co., Toronto.

INTERLOCKING RUBBER TILING
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber Mfg. Co., of Toronto, Limited, Toronto.

INVERTS
Standard Clay Products, Ltd., St. Johns, Que.

IRON
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

IRON AND STEEL BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

IRON, refined bar
Starr Mfg. Co., Ltd., Dartmouth, N.S.

IRON STAIRWAYS
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.

IRONWORK, architectural
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRONWORK, ornamental
*Canada Wire & Iron Goods Co., Hamilton, Ont.

IRON, LEAD AND PUTTY
A. R. Whittall, Montreal, Que.

JAM, canned goods, etc.
E. D. Smith & Son, Limited.

JAPANS, enamels, etc.
A. Muirhead Co., Ltd., Toronto.

JOINTERS
*Berlin Machine Works, Limited, Hamilton, Ont.

JELLY POWDER
S. H. Ewing & Sons, Montreal, Que.

JEWELRY, enamelled souvenir
Caron Bros., Montreal, Que.

JEWELRY, gold-filled
Caron Bros., Montreal, Que.

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JOIST HANGERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

KELSEY WARM AIR GENERATOR
The Jas. Smart Mfg. Co., Limited, Brockville, Ont.

KILNS
*Sheldons, Limited, Galt, Ont.

KINDLING
Standard Fuel Co., Toronto.

KNIFE GRINDERS
*W. H. Banfield & Sons, Toronto.

KNITTED GOODS
*Penman's, Limited, Paris, Ont.

KNIVES
Henry Disston and Sons, Toronto
The Peter Hay Knife Co., Limited, Galt, Ont.
Simonds Canada Saw Co., Limited, Montreal, Que.

KNIVES, pulp and paper
Henry Disston and Sons, Toronto.
The Peter Hay Knife Co., Limited, Galt, Ont.

KODAKS AND PHOTOGRAPHIC SUPPLIES
Canadian Kodak Co., Ltd., Toronto.

LABELS
Lawson & Jones, Ltd., London, Ont.

LABELS, lithographed
Harris Lithographing Co., Toronto.

LACE LEATHER
F. C. McCordick, St. Catharines, Ont.
*Sadler & Haworth, Montreal, Que.
*The D. K. McLaren Belting Co., Limited, Montreal, Que.
*The J. C. McLaren Belting Co., Limited, Montreal, Que.

LADDERS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LADDERS, step.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LADLES, foundry
*Northern Crane Works, Limited, Walkerville, Ont.

LAGER
E. L. Drewry, Winnipeg, Man.

LARD
F. W. Fearman Co., Ltd., Hamilton, Ont.

LATH
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.

LATHE CHUCKS
Ker & Goodwin, Brantford, Ont.

LATHE-DOGS
Canadian Billings & Spencer, Ltd., Welland, Ont.

LAUNCHES
Peterboro Canoe Co., Ltd., Peterboro, Ont.

LAWN MOWERS
Taylor-Forbes Co., Limited, Guelph, Ont.

LAWN SWINGS
Stratford Mfg. Co., Ltd., Stratford, Ont.

LAVATORIES, enameled
Amherst Foundry Co., Limited, Amherst, N.S.

LAUNDRY SINKS
Amherst Foundry Co., Limited, Amherst, N.S.

LEAD
*The Consolidated Mining and Smelting Co. of Canada, Limited, Trail, B.C.

LEAD GRINDERS
Benjamin Moore & Co., Limited, Toronto.

LEAD SHEET
Toronto Plate Glass Importing Co., Limited, Toronto.

LEAD PIPE
*The Steel Co. of Canada, Limited, Hamilton, Ont.
Toronto Plate Glass Importing Co., Limited, Toronto.
*The Canada Metal Co., Toronto.

LEATHER
The Robson Leather Co., Limited, Oshawa, Ont.

LEATHER, bookbinders'
Clarke & Clarke, Ltd., Toronto.

LEATHER, fancy
Clarke & Clarke, Ltd., Toronto.

LEATHER GOODS
Lamontagne, Ltd., Montreal, Que.

LEATHER, hemlock sole
The Breithaupt Leather Co., Ltd., Berlin, Ont.

LEATHER, patent colt and side leather
*A. R. Clarke & Co., Ltd., Toronto.

LEATHER, sheep skin, etc.
Clarke & Clarke, Ltd., Toronto.

LEATHER, upholstering
Clarke & Clarke, Ltd., Toronto.

LEATHER, upper
A. Davis & Son, Ltd., Kingston, Ont.

LINK BELTING
*Canadian Link Belt Co., Toronto.
*The Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

LINOLEUM
Dominion Oil Cloth Co., Limited, Montreal, Que.

LITHOGRAPHED BUSINESS STATIONERY
Business Systems, Ltd., Toronto.

LITHOGRAPHED TIN WARE
*MacDonald Mfg. Co., Limited, Toronto.

LITHOGRAPHERS
American Bank Note Company, Ottawa, Ont.
Harris Lithographing Co., Toronto.
*Montreal Lithographing Co., Montreal, Que.
Stone, Limited, Toronto.
Rolph & Clark, Limited, Toronto.

LOCKERS
*Canada Wire & Iron Works Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*Geo. B. Meadows, Wire, Iron and Brass Works Co., Toronto.

LOCOMOTIVE BLOCKS
Standard Clay Products, Limited, St. Johns, Que.

LOCOMOTIVES, industrial
*Montreal Locomotive Works, Ltd., Montreal, Que.

LOCOMOTIVE & MARINE BRASS WORKS
The James Morrison Brass Mfg. Co., Limited, Toronto.

LOOSE LEAF, BINDERS AND FORMS
Business Systems, Ltd., Toronto.

LOOSE LEAF SYSTEMS
Copeland-Chatterson Co., Limited, Brampton, Ont.

LOOSE LEAF SUPPLIES
The Esdale Press, Ltd., Edmonton.

LUBRICATORS, steam sight feed
Penberthy Injector Co., Limited, Windsor, Ont.

LUGS, for silos and water tanks
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Otterville Mfg. Co., Ltd., Otterville, Ont.

LUMBER
The C. Beck Mfg. Co., Ltd., Penetanguishene, Ont.
G. & J. Esplen, Montreal, Que.

LUMBER, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

LUMBERING BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

LUMBER, red pine and spruce
Gillies Bros., Ltd., Braeside, Ont.

LUMBER, spruce, fir, larch and cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

LUMBER, white pine
Gillies Bros., Ltd., Braeside, Ont.

MACHINE TOOLS
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, conveying
*Canadian Link Belt Co., Toronto.
Canadian Mathews Gravity Carrier Co., Limited, Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, flour mill
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

MACHINERY, grinding
*Canadian Hart Wheels, Limited, Hamilton, Ont.

MACHINERY, hoisting, etc.
*Polson Iron Works, Limited, Toronto.
J. & R. Weir, Montreal, Que.
*M. Beatty & Sons, Ltd., Welland, Ont.
*Northern Crane Works, Limited, Walkerville, Ont.

MACHINERY, ice cream
J. J. McLaughlin, Ltd. Toronto.

MACHINERY, iron working
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, pulp mill
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, punching and shearing
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, railroad and car shop
*John Bertram & Sons Co., Ltd., Dundas, Ont.

MACHINERY, roadmaking
Sawyer-Massey Co., Limited, Hamilton, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINERY, sawmill
The E. Long Mfg. Co., Limited, Orillia, Ont.
P. Payette & Co., Pentanguishene, Ont.
W. P. Plant, Hastings, Ont.
*The Waterous Engine Works Co., Limited, Brantford, Ont.
*Yates, P. B., Machine Co., Ltd., Hamilton, Ont.

MACHINERY, sheet metal working
Brown, Boggs Co., Ltd., Hamilton, Ont.

MACHINERY, special
Bawden Machine Co., Limited, Toronto.

MACHINERY, tannery
W. P. Plant, Hastings, Ont.

MACHINERY, transmission
*Dodge Mfg. Co., Ltd., Toronto.
*Goldie & McCulloch Co., Limited, Galt, Ont.

MACHINERY, woodworking
*Yates, P. B., Machine Co., Ltd., Hamilton. Ont.
Preston Woodworking Machinery Co., Ltd., Preston.
*The Waterous Engine Works Co., Limited, Brantford, Ont.

MACHINE WRENCHES
*Canadian Billings & Spencer, Ltd., Welland, Ont.

MACHINES, painting
Spramotor Co., London, Ont.

MAGNESITE
Canadian Carbonate Co., Limited, Montreal, Que.

MALT
*Hiram Walker & Sons, Limited, Walkerville, Ont.

MAPS AND MAP MOUNTING
The Geo. M. Hendry Co., Limited, Toronto.
Stone, Limited, Toronto.

MARTINGALE RINGS AND SLIDE LOOPS
The Arlington Co. of Canada, Ltd., Toronto.

MATCHERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MATCHES
*The E. B. Eddy Co., Ltd., Hull.

MECHANICAL STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

MEDICINES, patented and pharmaceutical
Dr. Ed. Morin & Cie., Ltd., Quebec.

METAL, babbitt
*Canada Metal Co., Toronto.
*Tallman Brass and Metal Co., Hamilton, Ont.
Alonzo W. Spooner, Limited, Port Hope, Ont.

METAL CEILING
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL PACKING
*Garlock Packing Company, Hamilton, Ont.

METAL ROOFING
*Pedlar People, Ltd., Oshawa, Ont.

METAL, spinning and stamping
The Booth-Coulter Copper and Brass Co., Limited, Toronto.

METAL SHINGLES
*The Metallic Roofing Co. of Canada, Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

METAL SIDING
*The Metallic Roofing Co., Ltd., Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

MILK DEALERS' MACHINERY AND SUPPLIES
De Laval Dairy Supply Co., Ltd., Peterboro, Ont.

MILLBOARD, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

MILLING CUTTERS
Pratt and Whitney Company of Canada, Dundas, Ont.

MITTS AND GLOVES (Indian, tan, red deerskins)
Holt, Renfrew Ltd., Quebec, Que.
A. R. Clarke & Co., Ltd., Toronto.

MOCCASINS AND SLIPPERS (Indian tanned leathers)
Holt, Renfrew Ltd., Quebec, Que.

MORTISERS
*Berlin Machine Works, Limited, Hamilton, Ont.

MOTOR CARS
*Ford Co. of Canada, Ford, Ont.
*Willys-Overland, Ltd., West Toronto.

MOTORS, electric (alternating current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*Canadian Crocker-Wheeler Co., Ltd., St. Catharines, Ont.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (direct current)
*Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Consolidated Electric Co., Limited, Toronto.
*Jones & Moore Electric Co., Ltd., Toronto.
*T. & H. Electric Co., Hamilton.

MOTORS, electric (repairing)
Consolidated Electric Co., Limited, Toronto.
*T. & H. Electric Co., Hamilton.

MOULDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

NAILS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

NAILS, copper
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.

NAILS, wire
Parmenter and Bulloch Co., Ltd., Gananoque, Ont.
The Graham Nail Works, Toronto.

NAPHTHA
*The Imperial Oil Co., Limited, Toronto.

NICKEL OXIDE
Coniagas Reduction Co., Limited, St. Catharines, Ont.

NUTS
*John Morrow Screw & Nut Co., Limited, Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

OAKUM, plumbers, Canadian Navy
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

*For Display Advertisement See Index Page 681

OAT CRUSHERS AND FLAKERS
J. Fleury's Sons, Aurora, Ont.

OFFICE DESKS
*Goderich Organ Co., Goderich, Ont.

OFFICE EQUIPMENT
*Office Specialty Co., Newmarket, Ont.

OFFICE STATIONERY
*The Montreal Lithographing Co., Limited, Montreal, Que.

OILS
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

OIL FILTRATION AND CIRCULATING SYSTEMS
S. F. Bowser & Co., Toronto.

OIL STORAGE SYSTEMS, self-measuring
S. F. Bowser & Co., Toronto.

OIL COMPANIES
Commercial Oil Co., Ltd., Hamilton, Ont.

OILS (Petroleum products)
*British American Oil Co., Limited, Toronto.
*The Imperial Oil Co., Limited, Toronto.

OILS, road
*Paterson Manufacturing Company, Toronto and Montreal.

OILCLOTHS, floor and table
Dominion Oil Cloth Co., Limited, Montreal, Que.

ORGANS
*Goderich Organ Co., Goderich, Ont.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.
Thomas Organ & Piano Co., Woodstock, Ont.

ORGANS, pipe
Casavant Freres, St. Hyacinthe, Que.
Karn-Morris Piano and Organ Co., Ltd., Woodstock, Ont.

ORGANS, parlor
*Goderich Organ Co., Goderich, Ont.

ORNAMENTAL IRON WORK
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Dennis Wire & Iron Works Co., London, Ont.
*The Geo. B. Meadows, Toronto Iron and Brass Goods Works Co., Limited, Toronto.

OVENS, portable bake
Bedford Stove Co., Bedford, Que.
Mackenzie & Co., Ottawa, Ont.
Peerless Overall Co., Rock Island, Que.
Walker Pant and Shirt Co., Walkerville and Chatham, Ont.
The Standard Shirt Co., Limited, Montreal, Que.

OVERCOATINGS
Rosamond Woollen Co., Almonte, Ont.

OVERHEAD RUNWAYS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

OXY-ACETYLENE WELDING
*L'Air Liquide Society, Montreal.

OXYGEN
*L'Air Liquide Society, Montreal.

PACKING BOXES
Barchard & Co., Limited, Toronto.

PACKING, engine
*Garlock Packing Co., Hamilton.

PACKING, rubber
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
Dunlop Tire & Rubber Goods Co., Limited, Toronto.
*Gutta Percha & Rubber, Limited.
Jenkins Bros., Ltd., Montreal, Que.

PAILS AND TUBS, wooden
The C. Beck Mfg. Co., Limited, Penetanguishene, Ont.

PAINTERS' SUPPLIES
A. Muirhead Co., Ltd., Toronto.

PAINTS
R. C. Jamieson & Co., Limited, Montreal, Que.

PAINTS and VARNISHES
A. Muirhead Co., Ltd., Toronto.
Benjamin Moore & Co., Limited, Toronto.
Standard Paint & Varnish Co., Ltd., Windsor, Ont.
The Imperial Varnish & Color Co., Limited, Toronto.
The Staneland Co., Ltd., Victoria, B.C.
A. Ramsay & Sons Co., Montreal, Que.
*The Dougall Varnish Co., Limited, Montreal, Que.
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Toch Bros., Toronto.

PAINTS, barn and bridge
Standard Paint & Varnish Co., Ltd., Windsor, Ont.

PAINTS, preservative
Standard Paint Co. of Canada, Limited, Montreal, Que.
*Paterson Manufacturing Company, Toronto and Montreal.
*Toch Bros., Toronto.

PANELBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PAPER BOARDS
Bathurst Lumber Co., Limited, Bathurst, N.B.

PAPER, book
Barber Paper & Coating Mills, Ltd., Georgetown, Ont.

PAPER BOXES
King Paper Box Co., Ltd., Montreal, Que.
*Rudd Paper Box Co., Limited, Toronto.

PAPERS, bond
*Rolland Paper Co., Ltd., Montreal, Que.

PAPER, envelope
Provincial Paper Mills Limited, Georgetown, Ont.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER KRAFT, wrapping printing and waterproof
*Beveridge Paper Co., Ltd., Montreal, Que.

PAPER, news
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPER, wrapping
*The Riordon Pulp and Paper Co., Montreal, Que.

PAPERS, building
Bathurst Lumber Co., Ltd., Bathurst, N.B.
*The Riordon Pulp and Paper Co., Montreal, Que.
Standard Paint Co. of Canada, Ltd., Montreal, Que.

PAPER, coated, book and label
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated cover
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, coated box board
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, enamelled blotting
*Ritchie & Ramsay, Ltd., Toronto.
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, gummed tapes
Gummed Papers, Ltd., Brampton, Ont.

PAPER, label
Provincial Paper Mills Limited, Georgetown, Ont.

PAPER, ledger
*Rolland Paper Co., Limited, Montreal, Que.
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, super-book
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, wall
Stauntons, Ltd., Toronto.

PAPER, Waxed
Business Systems, Ltd., Toronto.

PAPER, writing
The Toronto Paper Manufacturing Co., Cornwall, Ont.

PAPER, writing, high-grade
*Rolland Paper Co., Limited, Montreal, Que.

PAPER, writing, superfine
*Rolland Paper Co., Limited, Montreal, Que.

PARK SEATS
Stratford Mfg. Co., Ltd., Stratford, Ont.

PARLOR SUNDRIES
The Geo. McLagan Furniture Co., Limited, Stratford, Ont.

PATENTS
Fetherstonhaugh & Co., Toronto.
Ridout and Maybee, Toronto.

PATENT LITIGATION
Ridout and Maybee, Toronto.

PAY ROLL AUDITS
*International Time Recording Co. of Canada, Ltd., Toronto.

PEAS AND BEANS FOR SEED
W. P. Niles, Ltd., Wellington, Ont.

PERFORATED METALS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

PERFORATED MUSIC ROLLS
The Otto Higel Co., Ltd., Toronto.

PERFUMES AND TOILET PREPARATIONS
Sovereign Perfumes Ltd., Toronto.

PETROLEUM PRODUCTS
*The Imperial Oil Co., Limited, Toronto.

PHOTOMAILERS
*The Thompson & Norris Co. of Canada, Ltd., Niagara Falls, Ont.

PIANOS
Dominion Organ & Piano Co., Ltd., Bowmanville, Ont.
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO ACTIONS
The Otto Higel Co., Ltd., Toronto.

PIANO KEYS
The Otto Higel Co., Ltd., Toronto.

PIANOS, player
*Gourlay, Winter and Leeming, Toronto.
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIANO, player actions
The Otto Higel Co., Ltd., Toronto.

PIANO STOOLS and BENCHES
*Goderich Organ Co., Goderich, Ont.

PICKLES
The Wm. Davies Co., Ltd., Toronto.

PICKLES AND CATSUPS
T. A. Lytle Co., Ltd., Toronto.

PIG IRON
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PINE DOORS, SASH, MOULDINGS, ETC.
Wilson Bros., Limited, Collingwood, Ont.

PINS, society, emblems and badges
Caron Bros., Montreal, Que.

PIPE, cast iron, for water and gas
National Iron Works, Ltd., Toronto.

PIPE COUPLINGS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

PIPE COVERINGS
*Eureka Mineral Wood & Asbestos Co., Toronto.

PIPE ORGANS
Karn-Morris Piano and Organ Co., Limited, Woodstock, Ont.

PIPES, culvert
Standard Clay Products, Ltd., St. Johns, Que.

PIPE AND NIPPLES, black and galvanized
*Canadian Tube & Iron Co., Ltd., Montreal, Que.

PIPE, sewer
Hamilton and Toronto Sewer Pipe Co., Limited, Hamilton, Ont.
Standard Clay Products, Ltd., St. Johns, Que.

PIPE, soil and fittings
Authes Foundry, Ltd., Toronto and Winnipeg.
Warden King Lt., Montreal, Que.

PIPE AND TUBES, wrought
*Page-Hersey Iron Tube and Lead Co., Ltd., Toronto.

PIPE, threading and cutting off machines
John H. Hall & Sons, Limited, Brantford, Ont.

PISTON RODS
*The Canadian Drawn Steel Co., Limited, Hamilton, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.

PLANERS
*Berlin Machine Works, Limited, Hamilton, Ont.

PLANING MILLS
G. & J. Esplen, Montreal, Que.

PLASTER OF PARIS
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, hard wall
*Albert Mfg. Co., Hillsborough, N.B.

PLASTER, land
*Albert Mfg. Co., Hillsborough, N.B.

PLAYING CARDS
*The Montreal Lithographing Co., Limited, Montreal, Que.

PLOWS
J. Fleury's Sons, Aurora, Ont.

PLUMBERS' SUPPLIES
The Garth Co., Montreal, Que.
The James Morrison Brass Mfg. Co., Ltd., Toronto.

PLUMBING APPLIANCES
Standard Sanitary Mfg. Co., Ltd., Limited, Toronto.

PLUMBING SUPPLIES
Toronto Plate Glass Importing Co., Limited, Toronto.

PNEUMATIC MACHINERY
*Canadian Ingersol-Rand Co., Sherbrooke, P.Q.

POLE LINE MATERIAL (wooden insulator top pins, side blocks, pole steps, cross arms)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

POLES, curtain
Daly & Morin, Montreal, Que.

POLES, Flag
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

POLES, telegraph and telephone, cedar
Fernie Lumber Co., Ltd., Fernie, B.C.

PORCELAIN INSULATORS
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

PORK PACKERS AND CHEESE EXPORTERS
The Ingersoll Packing Co., Limited, Ingersoll, Ont.

POSTS, split cedar fence
Fernie Lumber Co., Ltd., Fernie, B.C.

POSTERS
Stone, Limited, Toronto.

POULTRY SUPPLIES AND MEDICINES
Lee Mfg. Co., Ltd., Pembroke, Ont.

POWDER, blasting
Canadian Explosives, Ltd., Montreal, Que.

POWER PRESSES
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, baling
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, filter
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.
*William R. Perrin, Ltd., Toronto.

PRESSES, hydraulic
*Canadian Boomer & Boschert Press Co., Limited, Montreal, Que.

PRESSES, sheet metal stamping
Brown, Boggs Co., Ltd., Hamilton, Ont.

***For Display Advertisement See Index, Page 681**

PRESSES, veneer
*William R. Perrin, Ltd., Toronto.
*Canadian Boomer & Boschert Press Co., Ltd., Montreal, Que.

PRINTERS
Rous & Mann, Ltd., Toronto.
R. G. McLean, Toronto.

PRINTERS, catalogue
R. G. McLean, Toronto.

PRINTING AND LITHOGRAPHING
Lawson & Jones, Limited, London, Ont.

PRODUCE
The Wm. Davies Co., Ltd., Toronto.

PROVISIONS
The Wm. Davies Co., Ltd., Toronto.

PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PULP, bleached sulphite
The Edward Partington Pulp and Paper Co., St. John, N.B.

PULP, sulphide
Bathurst Lumber Co., Ltd., Bathurst, N.B.

PUMPS
*Bawden Machine Co., Ltd., Toronto.
*Canadian Fairbanks-Morse Company, Limited, Montreal, Que.
*Darling Bros., Ltd., Montreal.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
Spramotor Co., London, Ont.

PUMPS, boiler feed
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

PUMPS, centrifugal
*M. Beatty & Sons, Ltd., Welland, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, iron
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
*Waterous Engine Works Co., Ltd., Brantford, Ont.

PUMPS, turbine and reciprocating
*Bawden Machine Co., Ltd., Toronto.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.
John McDougall, Caledonian Iron Works Co., Ltd., Montreal, Que.

PUNCHES
*Pratt & Whitney Co., Dundas.

PYJAMAS AND NIGHT ROBES
Williams, Greene & Rome, Berlin, Ont.

PYROMETERS
*Canadian Hoskins Co., Walkerville, Ont.

RADIATORS
Taylor-Forbes Co., Limited, Guelph, Ont.
Warden King, Ltd., Montreal, Que.

RAILINGS, brass and iron
*Dennis Wire & Iron Works Co., London, Ont.

RAILWAY SIGNAL APPLIANCES
General Railway Signal Co. of Canada, Ltd., Montreal, Que.

RAILWAY SUPPLIES
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
B. J. Coghlin Co., Ltd., Montreal, Que.

RAILWAY TARIFF BINDERS
The Esdale Press Ltd., Edmonton.

READY-TO-WEAR GARMENTS, LADIES'
H. C. Boulter Co., Ltd., Toronto.

REAMERS
*Pratt & Whitney Co., Dundas.
*Butterfield & Co., Rock Island, P.Q.

"REDWOOD" lager
E. L. Drewry, Winnipeg, Man.

REED AND RATTAN GOODS
Canada Furniture Mfgs., Limited, Woodstock, Ont.

REFRIGERATORS
Sanderson-Harold Co., Ltd., Paris, Ont.
Lee Mfg. Co., Ltd., Pembroke, Ont.

REFRIGERATING MACHINERY
The Linde Canadian Refrigeration Co., Ltd., Montreal, Que.

REFRIGERATORS, store, homes and institutions
Ham & Nott Co., Ltd., Brantford, Ont.
John Hillock & Co., Ltd., Toronto.

REINFORCEMENT BARS
*The Steel Co. of Canada, Limited, Hamilton, Ont.

REINFORCEMENT for concrete
*Canada Wire & Iron Goods Co., Hamilton, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

REVOLVING DOORS
*A. B. Ormsby Co., Ltd., Toronto.

RINGS, gold
Caron Bros., Montreal, Que.

RIVETS
*Canadian Tube & Iron Co., Ltd.,
*The Steel Co. of Canada, Limited, Hamilton, Ont.

RIVETS, bifurcated and tubular
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

RIVETS AND BURRS, iron, copper and brass
Parmenter & Bulloch Co., Limited, Gananoque, Ont.

ROLLERS, shade
Daly & Morin, Montreal, Que.

ROOFING, metal
*Metallic Roofing Co., Limited, Toronto.

ROOFING PAINTS
*Bird & Son, Hamilton, Ont.

ROOFING, ready to lay
*Bird & Son, Hamilton.
*Canadian H. W. Johns-Manville Co., Toronto.
Standard Paint Co. of Canada, Ltd., Montreal, Que.
*Paterson Mfg. Co., Toronto and Montreal.

ROOF TRUSSES
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal, Que.

ROPE
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

ROPE, cotton
Hamilton Cotton Co., Hamilton, Ont.

RUBBER FOOTWEAR
Ames Holden, McCready, Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
The Miner Rubber Co., Limited, Granby, Que.

RUBBER GOODS
*Canadian Consolidated Rubber Co., Limited, Montreal, Que.
*Gutta Percha & Rubber, Ltd.
*Dunlop Tire & Rubber Goods Co., Limited, Toronto.

RUBBER MOULDS
Bawden Machine Co., Ltd., Toronto.

RUBBER PACKING
*Garlock Packing Company, Hamilton, Ont.

RULES
The Lufkin Rule Co. of Canada, Ltd., Windsor, Ont.

RYE
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

SADDLERY HARDWARE
*Dominion Forge and Stamping Co., Walkerville, Ont.

SAFES
*Goldie & McCulloch Co., Limited, Galt, Ont.

SAMPLE CASES
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.
J. Eveleigh & Co., Ltd., Montreal, Que.

SANDERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SANDPAPER
*Delany and Pettit, Ltd., Toronto.

SASH CORD, cotton
Hamilton Cotton Co., Hamilton, Ont.

SALT
Canadian Salt Co., Ltd., Windsor, Ont.
The Dominion Salt Co., Limited, Sarnia, Ont.

SANITARY PAPER TOWELS
*E. B. Eddy Co., Ltd., Hull, Que.

SAW SHARPENING MACHINERY
*Canadian Hart Wheels, Limited, Hamilton, Ont.

SAWS
Henry Disston & Sons, Limited, Toronto.
Shurly & Deitrich, Galt, Ont.

SAWS, band
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut
*Berlin Machine Works, Limited, Hamilton, Ont.

SAWS, crosscut and band
Shurly & Deitrich, Galt, Ont.

SAWS, circular mill
Shurly & Deitrich, Galt, Ont.

SAWS, hack
*Victor Saw Works, Ltd., Hamilton, Ont.

SAWS, of all kinds
Simonds Canada Saw Co., Limited, Montreal, Que.

SAWS, rip
*Berlin Machine Works, Limited, Hamilton, Ont.
Shurly & Deitrich, Galt, Ont.

SAWMILLS
G. & J. Esplen, Montreal, Que.
*The Waterous Engine Works Co., Ltd., Brantford, Ont.

SAWS, specialties
*Victor Saw Works, Ltd., Hamilton, Ont.

SCALES
The Gurney Scale Co., Hamilton, Ont.

SCALES, counter
The Gurney Scale Co., Hamilton, Ont.

SCALES, railway track, etc.
The Gurney Scale Co., Hamilton, Ont.

SCREENS
*Canada Wire & Iron Goods Co., Hamilton, Ont.

SCREEN DOORS AND WINDOWS
Sanderson-Harold Co., Ltd., Paris, Ont.
Ham & Nott Co., Ltd., Brantford, Ont.

SCREWS
*John Morrow Screw & Nut Co., Ltd., Ingersoll, Ont.
*The National Acme Mfg. Co., Montreal, Que.
*The Steel Co. of Canada, Limited, Hamilton, Ont.

SCREW PLATES
*Butterfield & Co., Rock Island, P.Q.

SECURITIES, engraved
American Bank Note Co., Ottawa, Ont.

SERGES
Rosamond Woollen Co., Almonte, Ont.

SHAFTING
Canada Forge Co., Ltd., Welland, Ont.
*Canadian Drawn Steel Co., Ltd., Hamilton, Ont.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*Union Drawn Steel Co., Limited, Hamilton, Ont.
*Dodge Mfg. Co., Ltd., Toronto.

SHANTY BLANKETS
Slingsby Mfg. Co., Ltd., Brantford, Ont.

SHAPERS
*Berlin Machine Works, Limited, Hamilton, Ont.

SHEAR BLADES, iron
The Peter Hay Knife Co., Limited, Galt, Ont.

SHEATHING
*Paterson Mfg. Co., Toronto and Montreal.

SHEATHING, asbestos corrugated
*Eureka Mineral Wool & Asbestos Co., Toronto.

SHEET METAL STAMPINGS
Acme Stamping & Tool Works, Ltd., Hamilton, Ont.

SHELLAC
*Berry Bros., Ltd., Winnipeg, Man.

SHINGLES, asbestos cement
*Canadian H. W. Johns-Manville Co., Toronto.

SHIRTS
MacKenzie & Co., Ottawa, Ont.
John W. Peck & Co., Ltd., Montreal, Que.

SHIRTS, workmen's
*A. R. Clarke & Co., Ltd., Toronto.

SHOE PEGWOOD
O. Chalifour, Quebec, Que.

SHOE LININGS
Galt Knitting Co., Ltd., Galt, Ont.

SHOES, running and athletic
Ames-Holden-McCready, Ltd., Montreal, Que.

SHOOKS
Barchard & Co., Ltd., Montreal, Que.

SILVER BULLION
Coniagas Reduction Co., Ltd., St. Catharines, Ont.

SILVERSMITH
Canadian Wm. A. Rogers, Ltd., Toronto.
Standard Silver Co., Toronto.

SILVERWARE, sterling
Roden Bros., Limited, Toronto.

SINKS, enamelled
Amherst Foundry Co., Limited, Amherst, N.S.

SKATES, figure
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, genuine Acme
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, hockey
Canada Cycle and Motor Co., Ltd., Toronto.

SKATES, ice
Canada Cycle and Motor Co., Ltd., Toronto.

SKIFFS
Peterboro Canoe Co., Ltd., Peterboro, Ont.

SKYLIGHTS
*A. B. Ormsby Co., Ltd., Toronto.
*Metallic Roofing Co., Limited, Toronto.
*Pedlar People, Ltd., Oshawa, Ont.

SLEIGHS
Tudhope-Anderson Co., Limited, Orillia, Ont.

SLIPPERS
Ames-Holden-McCready, Ltd., Montreal, Que.

SMOKE CONSUMERS
*The Jones Underfeed Stoker Co., Ltd., Toronto.

SOAPS
J. Barsalou & Co., Ltd., Montreal, Que.

SOAP (soft, oil)
The Imperial Varnish & Color Co., Ltd., Toronto.
Sherwin-Williams Co. of Canada, Limited, Montreal, Que.

SODA WATER FOUNTAINS
J. J. McLaughlin, Ltd., Toronto.

SOIL PIPE
Anthes Foundry, Ltd., Toronto.

SOLDER
Alonzo W. Spooner, Ltd., Port Hope, Ont.
*Canada Metal Co., Toronto.
*Tallman Brass & Metal Co., Hamilton, Ont.

SOLDER, silver
Geo. H. Lees & Co., Hamilton.

SOLDER, wire and bar
*American Can Co., Montreal, and Hamilton.

SOLDERING IRONS AND COPPERS
Brown, Boggs Co., Ltd., Hamilton, Ont.

SNOWSHOES
Holt, Renfrew, Ltd., Quebec, Que.

SPARK PLUGS
Canadian Carbon Co., Limited, Toronto.

SPIRAL CONVEYORS
Canadian Mathews Gravity Carrier Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

*For Display Advertisement See Index, Page 681

SPLIT PEAS
H. Murton, Guelph, Ont.

SPIKES, railway and marine
Starr Mfg. Co., Ltd., Dartmouth, N.S.

SPIRITS
The St. Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.
*Hiram Walker & Sons, Limited, Walkerville, Ont.

SPORTING MEDALS AND TROPHIES
Roden Bros., Limited, Toronto.

SPRAYERS
Spramotor Co., London, Ont.

SPRING COTTERS
*Richards-Wilcox Canadian Co., Limited, London, Ont.

SPRINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
B. J. Coghlin Co., Ltd., Montreal, Que.
Guelph Spring & Axle Co., Ltd., Guelph, Ont.

SPRINGS, carriage and automobile
Guelph Spring and Axle Co., Ltd., Guelph, Ont.

SPRINKLER SYSTEMS
*Chicago Bridge & Iron Works, Bridgeburg, Ont.
*General Fire Equipment Co., Ltd., Toronto.
*Purdy, Mansell, Ltd., Toronto.
*Vogel Co. of Canada, Ltd., Montreal, Que.

SPROCKETS, gray iron and flint rim
*Canadian Link Belt Co., Toronto.

STAINS
R. C. Jamieson & Co., Ltd., Montreal, Que.

STAINS, creosote shingle
A. Muirhead Co., Ltd., Toronto.

STAMPINGS
*Dominion Forge and Stamping Co., Ltd., Walkerville, Ont.

STAMPS, steel, brass and rubber
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STAMP MILLS
*Jenckes Machine Co., Sherbrooke.

STATIONERY, office
Harris Lithographing Co., Toronto.

STEAM PIPE and BOILER COVERINGS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.
*Eureka Mineral Wool & Asbestos Co., Toronto.

STEAM SHOVELS
*M. Beatty & Sons, Ltd., Welland, Ont.

STEAM SPECIALTIES
*C. A. Dunham Co., Ltd., Toronto.
*Darling Bros., Ltd., Montreal.
*Sheldons, Ltd., Galt.

STEAM TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Sirocco Co., Windsor, Ont.
*Canadian Morehead Manufacturing Co., Limited, Woodstock.

STEEL
*Nova Scotia Steel & Coal Co., Ltd., New Glasgow, N.S.

STEEL BILLETS AND BLOOMS
*The Steel Company of Canada, Limited, Hamilton.

STEEL BUILDINGS
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*Dominion Bridge Co., Ltd., Montreal.
*Pedlar People, Ltd., Oshawa, Ont.

STEEL CASTINGS
*Canadian Steel Foundries, Ltd., Montreal, Que.
*Dominion Steel Foundry Co., Ltd., Hamilton.
*Joliette Steel Co., Ltd., Montreal.

STEEL PEN STOCKS
*Jenckes Machine Co., Sherbrooke.

STEEL RODS
*The Steel Co. of Canada, Ltd., Hamilton.

STEEL SASH
*Dennis Wire & Iron Works Co., London.
*Henry Hope & Sons, Ltd., Toronto.

STEEL SHELVING
*Dennis Wire & Iron Works Co., London.

STEEL WIRE RODS
*The Steel Company of Canada, Limited, Hamilton.

TELEPHONE ACCESSORIES
*Northern Electric Co., Limited, Montreal.

STENCILS, brass
Pritchard-Andrews Co. of Ottawa, Ltd., Ottawa, Ont.

STEREOTYPING
Central Press Agency, Toronto

STOKERS
*Hare Engineering Co., Limited, Toronto.
*The Jones Underfeed Stoker Co., Ltd., Toronto.

STOOLS AND BENCHES, piano and organ
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STONE
The Corinthian Stone Co., Guelph, Ont.
The Hagersville Contracting Co., Hagersville, Ont.

STORE FITTINGS
The Canadian Office & School Furniture Co., Ltd., Preston, Ont.

STOVES
Tudhope-Anderson Co., Limited, Orillia, Ont.
Bedford Stove Co., Bedford, Que.

STOVE LININGS
Standard Clay Products, Ltd., St. Johns, Que.

STOVES AND RANGES
Bedford Stove Co., Bedford, Que.
Lee Mfg. Co., Ltd., Pembroke, Ont.
The Jas. Smart Mfg. Co., Ltd., Brockville, Ont.
McClary Mfg. Co., London, Ont.

STRETCHERS, lace curtain
*Otterville Mfg. Co., Ltd., Otterville, Ont.

STRUCTURAL STEEL
Dominion Bridge Co., Montreal.
*Hamilton Bridge Works Co., Ltd., Hamilton.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*The Canadian Bridge Co., Ltd., Walkerville, Ont.
*The Structural Steel Co., Ltd., Montreal.

SUIT CASES
J. Eveleigh & Co., Ltd., Montreal.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

SURFACERS
*Berlin Machine Works, Ltd., Hamilton.

SWITCHBOARDS (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES (Electric)
*Crouse-Hinds Co. of Canada, Ltd., Toronto.

SWITCHES, railway
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

SWITCHES AND FROGS
*Canadian Steel Foundries, Ltd., Montreal, Que.

SWITCH STANDS
Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

TABLE COVERS, chenille
Hamilton Cotton Co., Hamilton, Ont.

TANKS
Chicago Bridge & Iron Works, Bridgeburg, Ont.
Goold-Shapley-Muir Co., Ltd., Brantford, Ont.
*McKinnon Holmes & Co., Sherbrooke, P.Q.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.
*The Goldie & McCullough Co., Ltd., Galt.
*The Waterous Engine Works Co., Ltd., Brantford.

TANNERS' SUPPLIES
McClary Mfg. Co., London, Ont.

TAPS
*Butterfield & Co., Rock Island, P.Q.
*Pratt & Whitney Co., Dundas.

TAPES, measuring
The Lufkin Rule Co., of Canada, Ltd., Windsor, Ont.

TAPES, paper and cloth, gummed and ungummed
Gummed Papers, Ltd., Brampton,

TELEPHONE ACCESSORIES
*Canadian Independent Telephone Co., Toronto.
*Northern Electric Co., Limited, Montreal, Que.

TENTS
Mackenzie & Co., Ottawa, Canada.
Turner, J. J., & Sons, Peterboro, Ont.
*Scythes & Co., Ltd., Toronto.

TERRA ALBA
*Albert Mfg. Co., Hillsborough, N.B.

TERRA COTTA (architectural)
Toronto Plate Glass Importing Co., Ltd., Toronto.

TEXTILE SUPPLIES (shuttles, bobbins, spools and picker sticks.)
The Lachute Shuttle Co., Limited, Lachute Mills, P.Q.

THEATRE CURTAINS, asbestos
*Canadian H. W. Johns-Manville Co., Toronto.

THUMB SCREWS
*Canadian Billings & Spencer,, Ltd., Welland.

TILING, interlocking rubber
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TIME RECORDERS
*International Time Recording Co. of Canada, Ltd., Toronto.

TIRES, cycle, auto and truck
Dunlop Tire & Rubber Goods Co., Ltd., Toronto.
*Gutta Percha & Rubber, Ltd.

TRADE MARKS AND DESIGNS
Ridout & Maybee, Toronto.

TRAPS
*C. A. Dunham Co., Ltd., Toronto.
*Canadian Morehead Mfg. Co., Woodstock.

TRANSFORMERS
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TOOLS, track
B. J. Coghlin Co., Ltd., Hamilton, Ont.

TOOLS, sheet metal workers'
Brown, Boggs Co., Ltd., Hamilton, Ont.

TRANSMISSION MACHINERY
*Canadian Link Belt Co., Toronto.
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.
*The Waterous Engine Works Co., Ltd., Brantford.

TROLLEYS
*Richard-Wilcox Canadian Co., Limited, London, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS
The Gurney Scale Co., Hamilton, Ont.
*The Canadian Sirocco Co., Ltd., Windsor, Ont.
*Northern Crane Works, Limited, Walkerville.

TRUCKS, brick, tile and lumber
*Waterous Engine Works Co., Ltd., Brantford.

TRUCKS, motor
*National Steel Car Co., Limited, Hamilton.

TRUCKS, warehouse and factory
The W. S. Mahaffy Co., Toronto.

TRUNKS
Lamontagne Ltd., Montreal, Que.
J. Eveleigh & Co., Ltd., Montreal, Que.
The M. Langmuir Mfg. Co. of Toronto, Ltd., Toronto.

TUBING, brass and copper
*Booth-Coulter Copper & Brass Co., Ltd., Toronto.
Canadian Seamless Wire Co., Toronto.
*Tallman Brass and Metal Co, Hamilton, Ont.

TUBING, gold and silver
Canadian Seamless Wire Co., Toronto.

TUMBLERS, foundry
*Northern Crane Works, Limited, Walkerville.
*Smart-Turner Machine Co., Ltd., Hamilton, Ont.

TURBINES, steam
*The Canadian Crocker-Wheeler Co., Limited, St. Catharines.

TWEEDS
Rosamond Woollen Co., Almonte, Ont.

TWINES
*Doon Twines Ltd., Doon, Ont.
*Shurly & Derrett, Ltd., Toronto.

TWINES, binder
Brantford Cordage Co., Ltd., Brantford, Ont.

TWINES, cotton
Hamilton Cotton Co, Hamilton, Ont.

TWIST DRILLS
John Morrow Screw and Nut Co., Ltd., Ingersoll.
Pratt and Whitney Co., of Canada, Dundas, Ont.
*The Wilt Twist Drill Co., Ltd., Walkerville, Ont

UNDERWEAR
Galt Knitting Co., Ltd., Galt, Ont.

UNDERWEAR, imperial
Kingston Hosiery Co., Ltd., Kingston, Ont.

UNIONS
*Dart Union Co., Ltd., Toronto, Ont
*Otterville Mfg. Co., Ltd., Otterville, Ont.

UPHOLSTERED FURNITURE, leather and tapestries
Imperial Rattan Co., Ltd.

VALVES
*Kerr Engine Co, Ltd., Walkerville.

VALVES, for steam and water
Jenkins Bros., Ltd., Montreal, Que.

VALVES, regrinding globe, angle, cross checks, swing checks, etc.
Penberthy Injector Co., Ltd., Windsor, Ont.

VARNISHES
*Ault & Wiborg Co of Canada, Ltd., Toronto.
Berry Bros., Walkerville, Ont.
*Dougall Varnish Co., Ltd., Montreal.
R. C. Jamieson & Co, Ltd., Montreal, Que.

VAULTS AND VAULT DOORS
*The Goldie & McCullough Co., Ltd., Galt

VENTILATING APPLIANCES
*Sheldons, Ltd., Galt.

VENTILATING SYSTEMS
Gurney Foundry Co., Ltd., Toronto.

VENTILATORS
*A. B. Ormsby, Ltd., Toronto.
*The Metallic Roofing Co. of Canada, Ltd., Toronto, Ont.
*Pedlar People, Ltd., Oshawa, Ont.

VINEGAR
The St Hyacinthe Distillery Co., Ltd., St. Hyacinthe, Que.

WAGONS
TudhopeAnderson Co., Ltd., Orillia, Ont.

WALL BOARDS
*Bird & Son, Hamilton, Ont.

WALL COPING
Standard Clay Products, Ltd., St. Johns, Que

WASHERS
*The Steel Company of Canada, Limited, Hamilton.

WASHERS, plate or wrought
London Rolling Mill Co., Ltd., London, Ont.

WASTES, wool and cotton
Factory Waste and Metal Co., Montreal, Que.
*Scythes & Co., Ltd., Toronto.

WATER-PROOF CEMENT COATING
Benjamin Moore & Co, Ltd., Toronto.
*Paterson Manufacturing Company, Toronto and Montreal.

*For Display Advertisement See Index, Page 681

WEBBING, elastic
Hamilton Cotton Co., Hamilton, Ont.

WEBBING, non-elastic
Hamilton Cotton Co., Hamilton, Ont.

WELL-DIGGING TOOLS AND MACHINERY
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WHEELS
*Canadian Car & Foundry Co., Ltd., Montreal, Que

Wheels, corundum
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, emery
*Canadian Hart Wheels, Ltd., Hamilton, Ont.

WHEELS, propeller, iron and steel
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, turbine, water
*Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

WHEELS, water (impulse type)
John McDougall Caledonian Iron Works Co., Ltd., Montreal, Que.

WELL DRILLING TOOLS AND MACHINERY
Oil Well Supply Co, Ltd., Petrolia, Ont.

WHIPS AND LASHES
Lay Whip Co., Rock Island, Que.

WHISKY
*Hiram Walker & Sons, Ltd., Walkerville, Ont.

WHITE ARSENIC
Coniagas Reduction Co., Ltd., St. Catharines, Ont

WHITE ENAMEL
*Berry Bros., Ltd., Winnipeg, Man.

WHITE LEAD
Brandram-Henderson, Ltd., Montreal, Que.
A. Ramsay & Son Co., Montreal, Que.

WINDMILLS
*Goold-Shapley-Muir Co., Limited, Brantford, Ont.
*Ontario Wind Engine & Pump Co., Ltd., Toronto.

WINDOW SHADES
Daly & Morin, Montreal, Que.

WIRE
*The Steel Company of Canada, Limited, Hamilton.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.
The Graham Nail Works, Toronto.

WIRE CLOTH
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, feeder and trolley
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRED GLASS
*Metallic Roofing Co., Ltd., Toronto.

WIRE GUARDS
*Canada Wire & Iron Goods Co., Hamilton.
C. H. Johnston & Sons, Ltd., Montreal, Que.

WIRE, insulated electric
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRE ROPE
The Dominion Wire Rope Co., Ltd., Montreal.
*The B. Greeening Wire Co., Ltd, Hamilton.

WIRE, weatherproof
*Northern Electric Co., Limited, Montreal.
*Eugene F. Phillips, Electrical Works, Ltd., Montreal.

WIRE WORK
C. H. Johnson & Sons, Ltd., Montreal, Que.
*Canada Wire & Iron Goods Co., Hamilton.
*The Geo. B. Meadows, Toronto, Iron and Brass Goods Works Co., Ltd., Toronto.

WOOD
Standard Fuel Co., Toronto.

WOOD PRINTERS
Barchard & Co., Ltd., Toronto.

WOOD PULP, mechanical
La Cie de Pulpe de Chicoutimi, Chicoutimi, Que.

WOOD SPLIT PULLEYS
*Dodge Mfg. Co., Ltd., Toronto.
*The Goldie & McCulloch Co., Ltd., Galt, Ont.

WOOL
*H. V. Andrews, Toronto.

WORSTED COATINGS AND SUITINGS
Rosamond Woollen Co., Almonte, Ont.

WRAPPERS, book, bottle, etc.
*The Thompson & Norris Co., of Canada, Ltd., Niagara Falls, Ont.

WROUGHT IRON PIPE
*The Steel Compony of Canada. Ltd., Hamilton.

WROUGHT PIPE
*The Steel Company of Canada, Ltd., Hamilton.

YARNS, cotton
Hamilton Cotton Co., Hamilton, Ont.

ZINC, electrical
*The Canada Metal Co., Toronto.

*For Display Advertisement See Index Page 681

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